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ABSTRACT

This report presents a set of tested procedures designed to yield current estimates of housing demand potential among black and Spanish speaking minority groups in United States metropolitan housing market areas during periods between Federal censuses. To produce estimates for the black homeseeker market, the analyst first "ages" the black population as of the last census, estimates how many have moved in or out of the market area, and applies household "headship rates" to determine the number of households which will result. Next the analyst estimates the potential black homeseeker population, the extent and rapidity with which these homeseekers are likely to depart from traditional or ghetto patterns of residence, and the probable effects of current housing supply constraints. Procedures for Spanish speaking households employ the same principles but variations are required due to inadequate data. These procedures should serve to provide usable, although rough, estimates of market potential. Sources of required data are included in the report. (Author/MK)

U.S. Department of Housing and Urban Development
Washington, D.C. 20410

A Model Procedure for Analyzing the Minority Housing Market

A MODEL PROCEDURE FOR ANALYZING THE MINORITY HOUSING MARKET

Prepared for:

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THE WASHINGTON CENTER FOR METROPOLITAN STUDIES

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PREFACE

The Washington Center for Metropolitan Studies is pleased to submit to the Office of the Assistant Secretary for Equal Opportunity, U. S. Department of Housing and Urban Development, this final report of a project to develop a model methodology for analyzing the potential housing demand of minority groups in American metropolitan areas.

This project has benefitted from the work of a number of people. Overall direction of the project was given by Eunice S. Grier, Research Staff Director at the Washington Center for Metropolitan Studies. George Grier, Vice President for Program Development, developed the initial project design and oversaw its evolution throughout. The estimating procedures for number, age and size of minority households were chiefly developed by Nancy Gaeta, Research Associate at the Washington Center, as were the prototypes for applying ratios based on unpublished census tape data to estimate the mover population from the household universe. Ms. Gaeta also designed the specifications for the numerous special printouts of Census data required for the analysis, and oversaw the development of most of the tabulations presented in the report.

The procedures for estimating minority household incomes and for estimating the Spanish-speaking population were largely the work of William J. Kruvant, former Research Associate at the Center. Mr. Kruvant also analyzed the data on veterans and helped develop the statistical test of the ratio estimating method. Janice H. Outtz, Research Assistant and Sherry Latimer, Research Assistant, assembled most of the bibliographical material used as background for the project, as well as helping with other aspects of the work. Lawrence Brown, Consultant to the Center, advised on the statistical test of the ratio-estimating procedure. Most of the physical preparation of all reports and other project materials was in the capable hands of Blonnie G. Reaves with the assistance of Sandra Sachs and Benda Notokoesoemo.

Needless to say, this project could not have been carried out without the support of the U. S. Department of Housing and Urban Development. We are especially grateful to Albert Ettinger, HUD Government Technical Representative in the first part of the project and to Ruth Clark, Government Technical Representative in the latter part, for their advice, encouragement, and patience. Sol Robinson, formerly special assistant to the Assistant Secretary for Equal Opportunity, played an especially vital role in the initiation and conceptualization of the project; and Lloyd Davis, Director, the Office of Voluntary Compliance, saw it through to the point of funding.

Atlee E. Shidler
President
The Washington Center for Metropolitan Studies

HIGHLIGHTS OF MINORITY HOUSING MARKETS IN SIX MAJOR METROPOLITAN AREAS

This section presents brief highlights of minority housing markets in the mid-1970s for six major U. S. metropolitan areas.

The Washington Center for Metropolitan Studies produced data on the black and/or Spanish-speaking markets in six areas in the course of developing and testing the market estimating method presented in this report.

The data have been combined, where appropriate, with information drawn from a review of the available literature bearing on the housing preferences of minority groups, and with data from extensive studies by the Center of changing racial patterns in metropolitan Washington, D. C.

A metropolitan area includes both the central city and its suburbs. The six areas selected for this project were chosen in consultation with the Department of Housing and Urban Development. They are:

Atlanta, Georgia
Boston, Massachusetts
Chicago, Illinois
Los Angeles, California
San Antonio, Texas
Washington, D. C.

Of the six areas listed, all but San Antonio have substantial concentrations of black households. Three of the six -- Chicago, Los Angeles, and San Antonio -- have considerable Spanish-speaking populations. The specific time period for which the market estimates were developed is the one-year span from Spring 1974 to Spring 1975. However, the data can be considered approximately correct for any other one-year time period in the mid-1970s.

Size of the Metropolitan Markets

In each of the six areas, the minority housing market is now large enough to warrant serious attention from the housing industry. The number of black and Spanish-speaking households which can be expected to enter the housing market in these areas during a one-year period during the mid-1970s is sizable -- usually amounting to tens of thousands and in one case totalling over 100,000. The numbers for the six metropolitan areas are as follows:

Atlanta -- About 18,000 black households.

Boston -- About 9,700 black households.

Chicago -- About 66,000 black and about 25,000 Spanish-speaking households -- 91,000 in all.

Los Angeles -- About 56,000 black and 88,000 Spanish-speaking households -- 144,000 in all.

San Antonio -- About 17,500 Spanish-speaking households.

Washington -- About 46,000 black households.

Where numbers are not given for black or Spanish-speaking households, it does not mean that there are no households of that minority group seeking homes or apartments in the area in question. It does mean, however, that the data available for the purpose do not permit reliable estimation of their numbers or characteristics.

Tenure of Housing Sought (Rental or Ownership)

In all of the six areas, considerably over half of all minority homeseekers are expected to seek rental accommodations. The proportions vary significantly from area to area. The estimated numbers and percent-

ages of minority households likely to enter the rental market in each area annually in a one-year period during the mid-1970s are as follows:

Atlanta -- About 13,500 black prospective renter households (75 percent of the total).

Boston -- About 8,700 black households (90 percent).

Chicago -- About 54,000 black households (82 percent), and about 22,000 Spanish-speaking households (88 percent).

Los Angeles -- About 46,000 black households (82 percent), and about 72,000 Spanish-speaking households (82 percent).

San Antonio -- About 11,500 Spanish-speaking households (64 percent).

Washington, D. C. -- About 40,000 black households (87 percent).

Although renters predominate in the minority market, the numbers of minority households seeking to buy homes are also estimated to be substantial in all areas. For a one-year period in the mid-1970s, these numbers are:

Atlanta -- About 4,500 black prospective homebuyer households.

Boston -- About 1,000 black households.

Chicago -- About 12,000 black and about 3,000 Spanish-speaking households -- 15,000 prospective minority homebuyers in all.

Los Angeles -- About 10,000 black and about 16,000 Spanish-speaking households -- 26,000 in all.

San Antonio -- About 6,000 Spanish-speaking households.

Washington, D. C. -- About 6,000 black households.

Incomes of Minority Homeseekers

Many potential minority homeseekers remain in the low-to moderate-income brackets which are difficult to serve in the unaided private housing market. But growing numbers have achieved incomes in the middle and upper brackets in each of the six areas. Minority households expected to enter the housing markets in the six metropolitan areas during a one-year period of the mid-1970s who will have incomes above $10,000 include:

Atlanta -- About 4,400 black households, of which about 500 will have incomes over $15,000.

Boston -- About 2,100 black households, about 500 of which will have incomes above $15,000.

Chicago -- About 25,400 black and about 8,800 Spanish-speaking households -- over 34,000 in all. About 11,800 of these will have incomes above $15,000.

Los Angeles -- About 15,800 black and about 31,400 Spanish-speaking households -- over 47,000 in all, of which about 14,000 will have incomes above $15,000.

San Antonio -- About 2,500 Spanish-speaking households, of which about 600 will have incomes above $15,000.

Washington, D. C. -- About 17,200 black households, of which about 6,000 will have incomes above $15,000.

Household Sizes

Prospective minority homeseekers have predominantly small households; hence most of them will be seeking small units. In all six areas, well over half of all minority households expected to be active in the housing market during the mid-1970s contain three persons or less. The estimated numbers of homeseeking households having three persons or fewer are:

Atlanta -- 10,800 black households, or 60 percent.

Boston -- 5,900 black households, or 61 percent.

Chicago -- 37,300 black households (57

percent), and 13,700 Spanish-speaking households (55 percent).

Los Angeles -- 38,100 black households (68 percent), and 56,000 Spanish-speaking households (64 percent).

San Antonio -- 9,600 Spanish-speaking households (53 percent).

Washington, D. C. -- 31,700 black households (69 percent).

Typically, prospective minority homebuyers have considerably larger households than prospective renters. For example, in metropolitan Chicago, about 66 percent of black households expected to be in the home purchase market in the mid-1970s contain four persons or more, compared to 38 percent of the 54,000 black potential renters.

Ages

Minority households which are active in the housing market tend to be quite young, on the average. The proportions of minority homeseeker households headed by persons under age 35 in the six areas are as follows:

Atlanta -- 8,600 households or 64 percent of black potential renters and 2,700 households or 59 percent of black potential owners.

Boston -- 4,700 households or 54 percent of black potential renters and 600 households or 60 percent of black potential owners.

Chicago -- Among blacks, 29,000 households or 54 percent of potential renters and 4,300 households or 37 percent of potential owners. Among Spanish-speaking, 14,000 households or 62 percent of potential renters and 800 households or 26 percent of potential owners..

Los Angeles -- Among blacks, 28,000 households or 60 percent of potental renters and 5,000 households or 50 percent of potential owners. Among Spanish-speaking, 44,000 households or 61 percent of potential renters and 6,400 households or 40 percent of potential owners.

San Antonio -- 7,000 households or 61 percent of Spanish-speaking potential renters and 2,900 households or 47 percent of Spanish-speaking potential owners.

Washington, D. C. -- 27,000 households or 67 percent of black potential renters and 2,400 households or 40 percent of black potential owners.

Since so many are young, minority homeseekers can be expected to be a vigorous and aggressive segment of the market, intent on seeking new opportunities and not likely to be satisfied with the restrictions formerly imposed on their freedom of movement by traditional segregated practices which have now been outlawed.

Locational Preferences

In most of the areas studied, minority households have recently shown a pronounced tendency to move into "non-traditional" locations, particularly in the suburbs, where few had been able to locate homes previously. Only in metropolitan Washington, D. C., however, has it been possible to determine the rate of minority movement into "non-traditional" areas since the 1970 Census. There, late 1974 data from an area-wide census updating project undertaken by the Washington Center for Metropolitan Studies and based on a household survey indicate that the suburban black population has increased by 61 percent or 110,000 persons since the 1970 Census. This is a larger gain in only four and a half years than in the preceding two decades.

The largest percentage increases have occurred in suburbs which previously had the smallest black populations. Fairfax County, Virginia -- one of the most affluent suburbs of Washington, and one long closed to new minority residents -- saw its black population nearly double, increasing from 15,859 to 30,100 in four and a half years. Most of this movement was clearly into neighborhoods which had had few black residents before. The movement to the suburbs was so rapid that the black population of the District of Columbia, the area's central city, decreased

for the first time in its history. These facts indicate that, under favorable conditions, minority homeseekers will move rapidly to take advantage of the broadened options made available to them by the protections of the Federal Fair Housing Act.

These statistics are in concert with the findings of a thorough review of the research literature bearing on minority housing preferences. The available research evidence shows no indication of significant overall differences in the housing preferences of minority and majority groups. Some studies show a distinct tendency by minorities to desire the superior housing accommodations and amenities most likely to be found in neighborhoods where the majority predominates.

In some other metropolitan areas besides Washington, analysis of patterns of minority movership, as revealed by 1970 Census data, shows a rapidly growing trend of minority movement to the suburbs during the late 1960s. In areas where one or more major suburban localities already had minority populations of 25,000 and over (individuals, not households) in 1970, it is also possible to measure the trend of minority movement into the remaining suburbs.

In most of the areas studied, an accelerating movement to the suburbs was clearly evident in the 1970 Census results -- even though the Federal Fair Housing Act of 1968, which was implemented in stages, had only partial coverage until a few months before the Census was taken. The Census results do not make it possible to distinguish how much of this movement was into suburban areas adjoining traditional minority concentrations. However, the Washington data indicate that minorities will move rapidly into "non-traditional" areas if conditions are favorable. Thus, where there is no movement out of "ghetto" concentrations, urban or suburban, the presumption must be strong that it is discrimination -- not free will -- that keeps them there.

A straightforward projection of the trends revealed by the 1970 Census to the mid-1970s, by the procedures recommended in this report, yields the following rough figures for the numbers likely to choose suburban housing in the five other metropolitan areas:

Atlanta -- About 30 percent of black prospective homebuyers (1,200 households) will probably locate in suburban areas annually, and about 12 percent of black prospective renters (1,600 households) will do so. Among black homebuyers, there was a marked upturn in suburban residence toward the end of the 1960s. Among black renters, however, there was no clear trend toward increased suburban movement in the period before the 1970 Census.

Boston -- About one-fourth of all black potential homebuyers, or 250 households annually, will choose the suburbs; and about 20 percent of all black potential renters, or 1,700 annually will do so as well.

Chicago -- Among blacks, the suburbs will receive about 20 percent of all potential homebuyers, or 2,400 households annually; and about 10 percent of all black potential renters, or 5,400 annually.

Among Spanish-speaking households, about half of all potential homebuyers, or 1,500 households annually, will choose suburban residences; as will about 20 percent of all potential renters, or 4,400 annually.

Los Angeles -- Among blacks, suburbanites will number half of all potential homebuyers, or 5,000 households annually; and about 25 percent of all black potential renters, or 11,500 households annually.

Among Spanish-speaking, about two-thirds of all potential homebuyers, or 10,500 households annually, will move to suburban locations; and about 45 percent of all potential renters, or 30,000 annually, will do so. Throughout the 1960s, large proportions of Spanish-speaking households in Los Angeles were choosing

suburban residences, but the upward trend in these figures over that period was not great.

San Antonio -- About one-fourth of Spanish-speaking potential home-buyers, or 1,500 households, will choose suburban locations; and about 10 percent of Spanish-speaking potential renters, or nearly 1,200 households, will do the same.

SUMMARY

The Market Estimation Procedures in Brief

This report presents a set of tested procedures designed to yield current estimates of housing demand potential among minority groups (Black and Spanish-speaking) in U. S. metropolitan housing market areas during the periods between Federal censuses. The estimates for one major housing market area (metropolitan Washington, D. C.) have been checked against data from an independently conducted census updating survey and have proved highly reliable.

These procedures are intended specifically for use with minority groups, and therefore have been designed to be appropriately sensitive to the current rapid shifts in the housing demand picture among these groups. However, they should be equally useful and accurate as techniques for estimation of market demand among the total or majority population. As for minorities, they have been almost totally ignored in the literature of housing market analysis. The procedures are thus intended to help fill a major gap in knowledge with regard to one of the most dynamic segments of U. S. housing markets today.

The techniques recommended here are designed to produce results for any metropolitan housing market area with a significant population of black or Spanish-speaking households. They can readily be applied by any conventionally-trained housing market analyst. In fact, they can be used by almost any reasonably intelligent adult. The required data sources will be found on the reference shelves of most well-equipped municipal or university libraries, and in the appendices of this report.

A simple pocket calculator will be a helpful tool in the calculations, but all of them can actually be performed with pencil and paper alone. The procedures may appear complex at first glance, but a careful reading of the examples will indicate that nothing more elaborate than simple algebra is needed to master them. The complete estimates for any metropolitan housing market area can usually be developed with no more than a week's work.

Knowledge of the local housing market situation will be helpful to the analyst in interpreting and refining the estimates, but it is not essential. While the procedures are basically the same for all groups (including the majority), variations are required for black and Spanish-speaking households because of differences in the quality of the available data for the two groups.

The first major stage in producing estimates for the black homeseeker market is to produce updated estimates of the number and characteristics of the total "universe" of black houscholds for the market area and time period under study. To do this, the analyst uses standard population estimating techniques in several steps, applying them with exceptional care and precision using the most reliable and recent data available (all data are from standard Federal sources).

First, the analyst "ages" the black population as of the last census, bringing it forward by age group to the year for which the estimates are required. Next, he estimates how many will have survived in each age group, using standard actuarial tables. Third, he estimates how many will have moved into or out of the market area under

study, using the most recent data on migration. Fourth, he applies household "headship rates" by age to determine the number of households which will result. The age distribution of these households is produced automatically by the procedure. Their household size and income distribution are then estimated in successive steps.

Not all of these households will enter the housing market during the period for which the estimates are prepared. Therefore, in the second stage of the method, the analyst produces estimates of the potential black homeseeker population -- applying data from actual experience on the relationships between numbers and characteristics of black homeseekers and all black households in the recent past. He then estimates the extent and rapidity with which these black homeseekers, under the new protections afforded by the Fair Housing Act, are likely to depart from "traditional" or "ghetto" patterns of residence -- again using the most recent trend data available. Finally, he estimates the probable effects of current housing supply constraints -- such as increasing sales prices and rents -- on their market potential.

The procedures for Spanish-speaking households employ the same basic principles, but variations are required because the data for this group -- although greatly improved in recent years -- are not as adequate. Less precise methods must sometimes be used as a result, and the results cannot be as precise as for black households. Nevertheless, they will serve to provide usable, though necessarily rough, estimates of market potential.

The basic source data required are:

- U. S. Censuses of Population, 1960 and 1970. State Reports, Series PC(1)-B, PC(1)-C, and PC(1)-D for the state in which the particular market area is located.

- U. S. Census of Housing, 1960 and 1970. State Reports, Series HC(1)-A and HC(1)-B, and Metropolitan Housing Reports, Series HC(2), again for the particular state and metropolitan area to be analyzed.

- U. S. Census of Population, 1970. Subject Reports, PC(2)-2E, Migration Between State Economic Areas, and PC(2)-1C, Persons of Spanish Origin.

- U. S. Census of Population, 1960. Subject Reports, PC(2)-1B, Persons of Spanish Surname; PC(2)-1D, Puerto Ricans in the United States.

The Appendices of this report supply all the remaining data, except for data on current housing prices which must be obtained locally.

CHAPTER 1

The Minority Housing Market Analysis Project: Need, Purposes and Assumptions

The Need for Analysis

Households of black and Spanish-speaking minorities are potentially one of the most dynamic segments of the housing market in many U. S. metropolitan areas today. At the same time, they are one of the most overlooked. While members of minorities are still found in disproportionate numbers among the poor and near-poor, minority groups have recently made impressive gains in purchasing power. These gains are large enough to place many in the market for privately-developed housing.

In the Washington, D. C. metropolitan area, for example, the number of black families reporting incomes of $12,000 or more increased by approximately three times between 1959 and 1969 1/ after adjustment for inflation. In other words, this figure represents real gain in purchasing power -- not an artificial increase due mainly to the changing value of the dollar. The $12,000-and-over income bracket represented more than 48,000 black families in metropolitan Washington by the 1970 census. 2/ In metropolitan Atlanta, the number of black families with $12,000-plus incomes increased by 670 percent in the same decade; in metropolitan Detroit, by 400 percent.

Spanish-American families in many areas registered similar gains. In the city of San Diego, California, for example, the number of Spanish surname families with incomes of $12,000 or more grew by almost five times between 1959 and 1969, again making an allowance for inflation. Families with $12,000-plus incomes numbered more than 5,000 or one-quarter of all families of Spanish surname counted in San Diego in the 1970 census.

The economic level of the majority population was also on the increase during the 1960s. Yet in many metropolitan housing markets, the percentage rate of increase of middle-and-upper-income families among minorities was greater than in the total population. Minority homeseekers thus have a considerably greater potential for participation in the private housing market than either their total numbers or overall rate of growth would suggest. And measured in terms of households, the demand unit for housing, minorities have been growing more rapidly than the majority population in many areas through a faster rate of increase in household formation.

Yet these groups have traditionally been, and remain today, largely overlooked by the U. S. housing industry. This fact is reflected in the sparse attention given to minorities in the literature of housing market analysis. In a rather extensive review of the published literature on housing needs and housing market analysis over the past quarter-century, the Washington Center for Metropolitan Studies found few references to the size and private market potential of black or Spanish-speaking households. Any references to these groups were usually in terms of their poverty and hence their need for subsidized public housing -- not in terms of their potential for participation in the private sector.

Meyerson, Terrett and Wheaton, in their classic 1962 analysis of urban housing problems, Housing, People and Cities, stated the view prevailing just about a decade

ago: "Low-income families, Negroes and other racial minorities are unable to compete in the housing market."3/ And the Baltimore (Md.) Regional Planning Council, in a 1960 housing market analysis, lumped minority families with other "problem" groups for which public aid was a prerequisite to meeting housing needs: "Much federal housing legislation has been enacted in order to provide various types of assistance and stimulus in the housing of these groups (i.e., low income families, minority group families, and families displaced by urban renewal)." 4/

Rapkin and Grigsby, in their 1960 analysis of the demand for housing in the Eastwick urban renewal area of Philadelphia, put the problem in a more accurate perspective: "Since Negro demand has never had the opportunity to express itself in a completely free housing market, it is not possible to offer definitive data on past experience." 5/

A 1967 manual on urban housing market analysis, published by the U. S. Department of Housing and Urban Development, gave only very minor attention to the minority market in urban areas -- even though minorities at that time constituted one of the largest and most rapidly-growing segments of the U. S. urban population. 6/ Most of the attention is contained in a section dealing with "Estimating Relocation Resources". This suggests that even in 1967 -- when 22 states already possessed fair housing laws -- the minority homeseeker was not generally viewed as possessing much private market potential even in urban areas. The manual states in passing that "a sub-market analysis for this group of families (i.e., minority families) may demonstrate that, contrary to prevailing expressions, a significant market for new construction may exist among this group at various price ranges". Having enunciated this possibility, however, the manual does not provide specific guidance on how to perform such a sub-market analysis.

Minority households were, of course, a substantial proportion of the urban housing market. In 1970, the U. S. Bureau of the Census counted almost 6.2 million households headed by blacks, or one out of every 10 households in the United States. Almost four out of five of these black households lived in the nation's 243 metropolitan areas.

The census also found some 2.3 million Spanish-speaking households in 1970. These were concentrated largely in New York State and in the five southwestern states of California, Arizona, New Mexico, Texas, and Colorado. However, there were also significant numbers of Spanish-speaking households in such widely-scattered states as Florida, Illinois, New Jersey, Michigan, and Ohio. Most of these households also lived in metropolitan areas.

The 1970 revised edition of FHA Techniques of Housing Market Analysis, the most recent version of this official handbook published by HUD, gives slight attention to minorities, and in a manner that suggests their inclusion is almost an afterthought. 7/ "Distributions by color and race" are stated to "provide an important qualitative segment of the population for analytical purposes," and the handbook acknowledges that "in some cases, persons of Spanish surname constitute a significant portion of the population". This is virtually the only mention of Spanish Americans in the 299-page volume. Nonwhite households (generally with no distinction made between blacks, Asian Americans, and others) fare a little better, but not much so. Occasional brief references are made in the text to nonwhites as warranting separate estimates, but specific instructions for making such estimates are seldom included.

Little or no mention is made of minority demand -- either nonwhite or Spanish-speaking -- as a factor in the total demand picture for housing, even in regard to subsidized and military housing. Although specific instructions are furnished for making a number of types of "sub-market analyses," no analyses of minority demand are among them. The detailed worksheets for estimating economic capacity at the end of the volume do include "adjustment factors" and separate columns for nonwhite households. These are to be used in conjunction with overall estimating procedures that are the same for whites and nonwhites. Spanish-American households receive no mention at all in this part of the volume.

Given this general framework of inattention, it is not surprising that a 1972 FHA housing market analysis of metropolitan Washington, D. C. -- where blacks are one-fourth of the population -- does not mention minorities at all although they are obviously included in the total figures. 8/ Whether

or not their role in the market was recognized, minorities were a definite force in metropolitan Washington's private housing market by 1972. Unpublished census statistics analyzed by the Washington Center for Metropolitan Studies indicate that between 1968 and 1970, 55 percent of all black homebuyers in metropolitan Washington were finding homes in the suburbs. In this period, the number of black home purchasers in Washington's suburbs averaged over 2,000 annually.

The fact that minority groups were given so little specific attention by housing market analysts has seldom been a matter of great concern to the private housing industry in its quest for customers. Until only a few years ago, homeseekers of racial and ethnic minorities received little or no consideration in the product development, site selection, and marketing activities of the vast majority of the nation's private homebuilders. What was sold or rented to them was usually in areas where they had traditionally lived, or in areas no longer of prime interest to the white majority. With few exceptions, almost everything offered to minorities in the new private market sold or rented readily -- and some shockingly poor locations and construction became commercial successes in the decades following World War II because there were so few options available to the minority homeseeker. Even so, most developers ignored the market completely, even on a segregated basis, and very few granted minorities equal access to their products.

One of the better-publicized early examples of a suburban commercial subdivision offered without discrimination to both minorities and the majority was Morris Milgram's "Concord Park," a 140-home ranch-house tract opened for sale on the fringes of the Philadelphia suburbs in the mid-1950s. It was miles distant from the nearest minority concentration of any substantial size. Despite this fact, the moderately-priced ($12,000 to $15,000) houses sold readily to minority homeseekers, mainly black. So quickly did they move that the developer -- whose goal was to demonstrate the commercial feasibility of racially-integrated housing -- imposed a quota in order to prevent selling out entirely to blacks. After two years of marketing he achieved a proportion of 45 percent black, 55 percent majority; but he could probably have sold the development out completely on a segregated basis within less than six months. 9/ This and a number of other successful demonstrations of the minority market potential did not, however, encourage many developers to follow suit.

The Federal Fair Housing Act of 1968, in combination with other recent civil rights advances, has drastically altered the "rules of the game" regarding minorities' participation in the private housing market. It is now against the law for developers, brokers, managers or lenders to discriminate in advertising, selling, renting, or financing homes or apartments. HUD has moved increasingly to seek cooperation by the housing industry in affirmative marketing policies that go beyond the mere requirement of compliance with the letter of the law and encourage minority participation. Many members of the housing industry in many metropolitan areas, however, remain unconvinced that minority homeseekers constitute a viable market for their products. If they turn to housing market analyses prepared by traditional methods, they will find little to persuade them otherwise. They will, in fact, find little information of any kind on the subject.

The Purposes of this Project

This project, developed by the Washington Center for Metropolitan Studies at the request of HUD's Office of the Assistant Secretary for Equal Opportunity, is intended to help overcome the existing gaps in knowledge regarding the size and structure of the housing market potential represented by the nation's two largest minority groups -- blacks and Spanish-speaking Americans. Briefly, its purpose has been to develop and test model procedures for estimating the housing market potential of black and Spanish-speaking homeseekers. These procedures have been tested with actual data for six major metropolitan housing market areas, chosen in consultation with HUD to represent a wide range of pertinent market variation.

The model procedures must be capable of estimating as accurately as possible the size and characteristics of the black and/or Spanish-speaking housing markets at any given point in time for any metropolitan market area with significant concentrations of either or both groups. The procedures must be usable by analysts trained in conventional

market analysis techniques. In fact, the Center's goal in this effort has been to develop procedures that could be applied by any reasonably intelligent person, including federal, state or local equal opportunity specialists, housing developers, or members of private civil rights groups. The procedures employ available data from reliable sources and do not call for special surveys or require the aid of a computer.

A key requirement is that the procedures be adequately sensitive to the important differences between the majority and minority markets at a point in time when minority market potential is in a stage of rapid flux. Specifically, the method has been designed to take account of differential rates of growth in demand potential, and particularly of the exceptionally rapid recent increase in the minority market's economic capacity.

In addition to economic growth, the model procedure is designed to take into account in its estimates the special factors stemming from the history of past exclusion which may either motivate minority groups to compete with especial vigor for opportunities now available on an unsegregated basis under the Federal Fair Housing Act; or may continue to inhibit their free participation in the housing market and restrict minority homeseekers to "traditional" areas. Minority homeseekers' significance in the housing market at this point in time, and probably for years to come, is unquestionably enhanced by pent-up demand for housing options previously unavailable to them. The long history of exclusion of minorities from the "mainstream" of the housing supply has also contributed to a legacy of crowding, price gouging, substandard housing conditions, and inequitable provision of public facilities and services -- all of which may well add to the incentives for minority households to put themselves in the market for a change in their housing situation.

Counteracting these positive motivations, of course, are others which may inhibit full minority participation in the housing market. Experience with discriminatory treatment in the past (as well as lingering vestiges of discrimination in the present) may well limit minority homeseekers' perceptions of the housing supply and the operation of the market. These perceptions may range from outright fear of moving into neighborhoods occupied predominantly by the majority to simple unawareness that the options open to them in the unsegregated market may include substantial numbers of homes in neighborhoods fitting both their wants and ability to pay, as well as cultural institutions meeting their needs. The method recommended here, therefore, includes special procedures intended to estimate the probable geographic patterning of minority housing market participation in the short-term future based on the most recently available data on the characteristics and behavior of minority homeseekers -- not on long-term and traditional patterns which may now be changing.

The Procedures

The market estimating procedures recommended here are straightforward. Though requiring a degree of care and effort on the part of the analyst, they do not require any specialized knowledge or technical training. Naturally, however, the better acquainted the analyst is with the housing conditions and the situation of minority groups in the area for which he is estimating, the better equipped he will be to apply the techniques and to interpret the results.

Most of the data sources used to estimate housing demand are standard published sources (mainly from the U. S. Bureau of the Census and the U. S. Department of Health, Education and Welfare). Where, in one key part of the method, it has been necessary to turn to unpublished census data available only through special analysis of census basic records, the Center has developed and supplied estimating ratios based upon analysis of the relevant data for areas with substantial black and/or Spanish-speaking populations.

For information on price levels and other characteristics of the housing supply, sources are suggested which are usually available in one form or another at the local market area level. In addition, we anticipate that analysts who utilize this methodology will often know a great deal about the local housing scene, and will temper the interpretation with their own insights and knowledge.

Assumptions and Guiding Principles -- The method relies heavily upon a key assumption, which is well supported by the available evidence. It is that there are a few

basic variables which largely determine housing options and decisions for any household, regardless of its race or ethnic origin. These are the size of the household, its income, and its stage in the life cycle. For example, household size determines the minimum number of rooms the household will need; household income determines how much it can pay; stage in the life cycle determines the likelihood that the household will wish to move at all, and the tenure (ownership or rental) it will likely choose. Stage of life can also influence choice of unit size and its location. Thus, the age of the household head becomes a particularly important factor in housing market analysis. Within the limitations imposed by these characteristics, the individual household can exercise a certain amount of choice from the range of suitable housing made available to it in the market. Therefore, the procedures recommended here place a great deal of stress on accurate estimates of the current minority household population, broken down by age of head, income, and household size, as basic market determinants.

A second major assumption is that the characteristics and choices of households likely to be in the housing market in the near future are best determined by examining those who have been in the market in the recent past. Particularly in regard to "big-ticket" purchases like housing, surveys of consumer opinion have not proved a reliable index to behavior in the market place. Data on characteristics and choices of households which have moved recently can be obtained, however, by special computer analysis of unpublished census magnetic tape files. These recent mover households are used as a surrogate for those likely to enter the market in the near future. This data source, which has not hitherto been widely used in housing market analysis, has been utilized extensively in this project to gain better understanding of the minority market.

In the jargon of housing market analysis, the procedures recommended here deal mainly with the "demand side" of the market equation. As such, they provide data on the potential demand present in the minority market. Housing market analysts more commonly deal with "effective demand" or "actual demand" -- a concept which incorporates data from the "supply side" of the equation. Potential demand will be translated into effective demand, however, only if housing is available in adequate quantities, of suitable sizes and types, and at price levels reasonably well matched to the characteristics of the potential market.

For minorities, housing has not been in the past, and almost certainly is not now, equally available as to the majority population. In addition, many of the restrictions imposed on availability of the housing supply to minorities are increasingly subtle and covert ones, and for this reason are virtually impossible to measure. The minority homeseeker's personal response to this situation, and his own perceptions of the various alternatives available to him as well as their relative attractiveness, may cause his market behavior to differ substantially from those of a majority homeseeker for reasons alluded to earlier. Under these restraints, the concept of "effective demand" would seem to have less utility in regard to the minority market than to the majority.

We have therefore concentrated in this project largely on methods to obtain the most accurate estimates possible of the minority demand potential. In these estimates we are particularly careful not to incorporate supply considerations until the final stage of the method after potential demand has been gauged. For example, additions to the occupied housing stock have often been used in housing market work as a major data source for estimating the increase in number of households. It is quite true that by definition a household consists of all occupants of a housing unit. Therefore, this approach may appear justified. But by mixing into the analysis the effects of current supply constraints -- such as an inadequate rate of construction, excessively high prices, or (in the case of minorities) exclusion from significant portions of the supply, this approach fails to take proper account of the fact that households which would potentially be formed and would potentially become demanders of housing may not be able to do so under existing supply conditions. This is particularly true in the time period when this method is being developed. Since this potential demand would become effective demand if the supply were able to accommodate it, we believe that it should be dealt with separately and directly.

Analyses of local employment trends and prospects, with special regard to key indus-

tries, traditionally have also played a prominent role in housing market analysis work. There is no denying that employment influences housing markets. However, over the past several decades an increasing amount of evidence has accumulated to indicate that the influence of employment trends -- or industrial employment trends, at any rate -- upon local housing markets is partial and largely indirect. Employment does play a role in generating demand for housing through its influence on migration, although the relationship is not simple. Areas like Seattle, Washington and South Bend, Indiana, which have suffered major setbacks to their local industrial base, have continued to show growth in population, household incomes, and housing.

With regard to the housing market among minorities, the influence of overall employment trends is even more problematic, since minorities do not yet share equally in the opportunities afforded by the employment base despite recent gains. For these reasons, we have not incorporated specific analysis of employment in the procedures we have developed. However, the migration factor is estimated separately in the method, and its contribution can be adjusted to reflect different assumptions as to employment conditions. Household incomes are also dealt with separately; and again the estimates can be adjusted to reflect changing local employment conditions, should the analyst believe that this is warranted.

Stages in the Analysis -- The market analysis procedures recommended here begin with a stage that attempts to produce the best available estimate of the total minority household population of the local housing market area as of the date of estimate, separately for black and Spanish-speaking minorities. Housing market areas are defined for our purposes in terms of "standard metropolitan statistical areas" (metropolitan areas or SMSAs, for short) for which local data are produced by the U. S. Bureau of the Census.

The methods specified for intercensal estimation of the total household population entail very detailed breakdowns of that population by age of head and number of household members. The additional effort required is justified, we feel, by the fact that only through such precision can the method take accurate account of the most vital and dynamic components of change in the minority household population. Age structure is one of those; and the unprecedentedly large numbers of young persons now reaching the prime ages for household formation require an estimation method that is appropriately sensitive to their existence. Migration and household headship rates also vary significantly with age, and for this reason they are applied on an age-specific basis. All rates are on a color or race-specific basis in the case of blacks, and where possible on an equally precise basis for Spanish-speaking Americans. Unfortunately, serious limitations in the available data sources make it impossible to be as precise with regard to estimating methods for the Spanish-American population as we would wish.

In the following stages after the size and structure of the current household population have been determined, we apply estimating ratios to determine the size and probable structure of that group of households who will probably be in the market for housing in the period for which estimates are required. Quite commonly, housing market analyses are prepared for two-or three-year time spans. We have chosen here, however, to estimate for a one-year period -- since many people find it easier to think of the market in single-year terms. If the analyst feels that a two-or three-year market estimate would be more appropriate to his needs, he can readily adapt the method to produce it.

In preparing these estimating ratios we have used the 1970 Census One Percent Public Use Sample files, which are now available for county groups within major SMSAs. These data files are, in effect, coded transcripts of the responses of a representative sample of households to the census questionnaires. The responses have been scrubbed of all identifying data to preserve confidentiality, but are otherwise complete. Any census item may thus be cross-tabulated against any other for a virtually limitless range of analytical purposes, providing access to far more data than are available from the published reports.

We have made extensive use of these tapes in this project -- through special computer printouts designed to the Center's specifications -- to analyze unpublished data on the characteristics of minority households which have recently been in the housing market, and to relate their characteristics to those of the total household universe. The

tapes themselves cannot be read or analyzed without a computer capability, however, which may not be within the reach of every analyst. Because of the large amount of data contained in them, they are also quite expensive to run. Finally, they are not available separately for areas below 250,000 population.

For these reasons, the Center has developed an approach to market estimation which does not require the analyst to have direct access to unpublished census files -- or to the computer capability required to use them. Estimating ratios have been prepared by the Center based on regional averages for key market variables in 47 major metropolitan areas with sizable concentrations (100,000 or more) of either black or Spanish-speaking minorities, or both. These average ratios are furnished in this report, and may be used by the analyst in estmating for any market area.

Methodological Differences for Different Minority Groups -- Although the basic assumptions underlying the methodology are the same for all ethnic groups (including white homeseekers, for that matter), some modifications in the overall procedure have been required for different minority groups. The procedures for Spanish-speaking households are different from those for black households. In fact, differences in method are required for the Spanish-speaking population depending on whether the market area is in the Southwest and largely Chicano or whether it is an area where the predominant group is Puerto Rican or of some other Spanish origin.

In major part the problem is one of differences in the availability of reasonably reliable and consistent data for both 1960 and 1970, so that trend lines are hard to develop. The data on the Spanish-speaking population in the 1960 census were especially weak, and often based on highly questionable and inconsistent definitions of terms. Furthermore, the Spanish-speaking population was largely ignored outside the states of the Southwest except for a few areas where some information on Puerto Ricans was published.

For 1970, the published census reports contain more information on Spanish Americans throughout the United States. Even in the Southwest, however, comparability with 1960 data is often limited because of changes in definitions and other data problems. For example, in 1960 three different measures were used to identify Spanish Americans in the five southwestern states -- birth or parentage, mother tongue, and surname. In 1970 still another measure was added - country of origin. In addition to all these limitations of geographic coverage and consistency of definitions, it is also a virtual certainty that Spanish-speaking Americans have been seriously under-counted in all decennial censuses, including the latest. 10/

Our ability to make accurate estimates for Spanish-speaking households is hampered also by the fact that certain key data are not available for this group. For example, data on survival rates are not published for Spanish-speaking households. Nether are migration data. These gaps make it necessary to employ different, and in some respects less satisfactory, estimating methods for this group than for blacks.

Finally, the Spanish-speaking population requires quite different sets of generally applicable parameters for use in estimating the future size and characteristics of the housing market. Although these parameters are drawn in all cases from data on recent movers as given in the 1970 Census Public Use Sample Files and manipulated in the same fashion, they differ significantly from one ethnic group to another as a result of the groups' different cultural and historical experience.

Testing the Procedures -- The first phase of this project involved the development and initial testing of a first-cut procedure on the basis of data for the black population of the Washington, D. C. metropolitan area, and estimating black homeseeker potential and behavior for the time period from Spring 1974 to Spring 1975. This procedure was then refined and adjusted using data for five additional metropolitan areas across the country chosen in consultation with HUD. In two of the areas, data were utilized to estimate both black and Spanish-speaking homeseeker potential (Chicago and Los Angeles - Long Beach); in two more areas for the black population only (Boston and Atlanta); and in one area for the Spanish-speaking population only (San Antonio). The five areas were intended to provide the widest possible range of variation with regard to the minority homeseeker market in order to "shake down" the methodology as thoroughly as possible.

Since the method used here to estimate the characteristics of the mover population represented a new and previously untested departure from the standard approaches to housing market estimation, the Center was concerned to test the general reliability of this approach beyond the limits of the six primary test areas. For this reason, a special statistical analysis was performed using data for 34 additional areas, in order to determine the feasibility of predicting overall movership from published census data on the household universe. The test demonstrated exceptionally high and stable relationships, thus lending considerable confidence in the feasibility of the ratio procedure we have devised to estimate characteristics of the mover population from characteristics of all households.

The procedures were also evaluated by comparing the projections produced for the Washington, D. C. market area with the results of an area-wide sample survey of households conducted by the Washington Center for Metropolitan Studies under separate sponsorship to update the 1970 census results. The two sets of figures -- one produced by a projection methodology and the other from "hard" survey data -- were remarkably close in most cases. This gave further support to the reliability of the procedures developed in the project.

Organization of this Report

The remaining sections of this final report to HUD on the development of a model procedure for estimating the potential homeseeker market in local market areas throughout the United States present, first, the methodology for estimating the black homeseeker market (Chapter II), and, second, the methodology for estimating the Spanish-speaking homeseeker market, both in the Southwest and in other parts of the nation (Chapter III). Finally, Chapter IV reports on the validation of the method by comparing its results with those from an independent household survey.

Further details of the process by which this model methodology was produced have been given in the various preliminary reports submitted by the Washington Center for Metropolitan Studies to the U. S. Department of Housing and Urban Development. Copies are available in the library of the Washington Center for Metropolitan Studies and the Office of the Assistant Secretary for Equal Opportunity of HUD.

Chapter 1 Notes

1/ In the decennial census incomes are reported for the year preceding the taking of the census.

2/ Figures on incomes are from an unpublished study of family income changes from 1959 to 1969 in 21 American metropolitan areas by the Washington Center for Metropolitan Studies.

3/ Meyerson, Martin, Barbara Terrett, and William Wheaton, Housing, People and Cities. (New York: McGraw-Hill, Inc., 1962).

4/ Baltimore Regional Planning Council. Housing Market Analysis. (Technical Report No. 6). (Baltimore: Maryland State Planning Department, 1960).

5/ Rapkin, Chester and William Grigsby. The Demand for Housing in Eastwick. (Prepared for the Redevelopment Authority of the City of Philadelphia, Institute for Urban Studies, University of Pennsylvania, 1960).

6/ U. S. Department of Housing and Urban Development. Urban Housing Market Analysis, by Richard Lippold. (Washington: Government Printing Office, 1967).

7/ U. S. Department of Housing and Urban Development. FHA Techniques of Housing Market Analysis. (Reprinted and revised, August 1970.)

8/ U. S. Department of Housing and Urban Development. Analysis of the Washington, D. C. Housing Market as of January 1, 1972, (Washington: August 1972.)

9/ Grier, Eunice and George. Buyers of Interracial Housing: A Study of the Market for Concord Park. (Philadelphia: Institute for Urban Studies, University of Pennsylvania, 1957.)

10/ For a detailed discussion of policies and procedures of the U. S. Bureau of the Census in enumerating the Spanish-speaking population in the United States, see U. S. Commission on Civil Rights. Counting the Forgotten, The 1970 Census Count of Persons of Spanish-speaking Background in the U. S. (Washington: Government Printing Office, April 1974.)

CHAPTER 2

Estimating The Black Homeseeker Market

While some aspects of the procedures are the same for black and Spanish-speaking households, it has been necessary to modify the method for the two groups for the reasons specified in Chapter 1. This chapter presents the procedures recommended for use in estimating the black homeseeker market in step-by-step fashion, with examples.

Stage 1: Updating the Household Base

The first stage in the procedure is intended to produce a "profile" of the overall minority household population for the area and time period under examination. Not all households will be in the housing market, of course. However, it is from this overall household base that the potential homeseekers will come. Thus, its size and characteristics are important in determining market demand.

For the great majority of U. S. metropolitan areas, no accurate counts of the minority population are currently available except at the ten-year intervals of the regular federal census. While interim estimates of the total population are produced for many local areas by state agencies using procedures prescribed by the U. S. Bureau of the Census, most states do not produce local area estimates for minorities. Even when available, these estimates seldom break down the population into households by age and income -- variables of great significance to the housing market.

Thus, the analyst must usually rely on his own estimates. To do this, the procedure employs modern demographic projection techniques rigorously applied in conjunction with the most recent and reliable data sources. A considerable amount of effort is required to produce these estimates. When the work is finished, however, the analyst will have quite a complete picture of the minority household population as of the year of estimate which is as accurate as currently available techniques and data sources permit.

For the black population, the analyst first produces an updated estimate of the total number and distribution of households by age of the head. The recommended method involves:

1. bringing the area's resident population of black individuals as of the latest census forward in time to update its age distribution to the year of estimate. This step is necessary because changes in the age structure of a population over time have an important influence on household formation.

2. applying survival rates by specific age groups to determine changes in the resident population due to mortality in the intervening period. Deaths have significant effects on households at upper age levels.

3. applying migration rates by individual age category to account for migration either into or out of the area. With occasional exceptions, migration tends to be concentrated in the younger age groups where household formation is greatest.

4. finally, applying household "headship rates" by age to obtain an updated

number of households in each individual age category.

This procedure is illustrated in Table 1, using data for Washington, D. C. and the year 1975. The steps are described below.

Step 1: "Aging" the population -- If the year of estimate is a multiple of five, the analyst may draw 1970 base data by five-year age groups directly from published census reports. 1/ He then merely moves each five-year age category up to the next highest level: 20-24 years becomes 25-29 years, etc. This is the procedure illustrated in Table 1, Columns 1 and 3. If an estimate for some other year is required, the work will be somewhat more involved -- since published census tables at the metropolitan area level do not contain data for minorities by single years of age. The analyst must then turn either to unpublished census data by single years, or to an allocation procedure.

If the analyst wishes to use the unpublished data, they can be obtained from computer printouts of the 1970 Census Fourth Count Summary magnetic tape files. These printouts may be available in local planning agencies, universities, or other data repositories. If not available, a number of census summary data processing centers throughout the nation are also equipped to provide such printouts at reasonable cost. Alternatively, the analyst may use an allocation procedure to obtain single-year data. A recommended set of allocation ratios, which are likely to be sufficiently accurate for practical purposes, is shown in Appendix A-1.

The user will note that no effort is made to estimate the current size of the age group under five. For our purposes, this group is irrelevant since small children do not -- at this point in time, at least -- form households of their own. If single-year data have been used, they should be recombined into five-year age categories, equivalent to those used in the census, after the "aging" procedure has been completed. This will simplify later steps in the analysis.

Step 2: Applying survival rates -- The next step is to adjust for deaths in the resident population. This is done by multiplying the numbers in each age category by the most recently available survival rate for the same age group. These rates for five-year groups of the black population are found in Table 1, Column 4. 2/ The age-specific survival rates used here are drawn from national data for 1970. Survival rates at the level of metropolitan areas are unavailable, but would not usually be expected to vary significantly from national levels. Nor do these rates change greatly over short periods of time.

Step 3: Applying migration rates -- The next step is to adjust the surviving black population in each age group to take account of migration by blacks into or out of the market area since the last census. Here, data for local areas are available and should be used, since migration patterns vary greatly from one metropolitan area to another. 3/

Migration rates can also change substantially over time, but the most recent available data are for the period 1965-1970. The procedure used here attempts to minimize any errors due to the time lag by applying migration rates on an age-specific basis. The migration data shown in Table 1, Column 6 for metropolitan Washington, D. C. illustrate one paramount fact about migration: it is highly age-specific. The rate for blacks aged 20-24 in metropolitan Washington was .1511, while that for blacks aged 45-54 was only .0078. Put more simply, 15 percent was added by net migration to the black population of metropolitan Washington in the 15-19 age group during the 1965-1970 period, while less than 1 percent was added to the black population aged 40-49.

These sharp differences with age are likely to exceed any shift in overall migration levels over short periods of time. If the analyst nonetheless remains unhappy with using net migration data for a different time period, he may develop alternate estimates of households based on differing assumptions as to migration. However, we expect that he will generally find that such assumptions make comparatively little difference under the population conditions which prevailed during the early 1970s. For example, if no net migration by blacks took place into the Washington area during the 1970-1975 period, this fact would reduce the estimated total number of black households in 1975 by only 4 percent below our estimate.

The 1970 census report on migration gives the number of blacks in each five-year age group who migrated into and out of State Economic Areas between 1965 and 1970. From these figures, it is possible to calculate net migration for each such area. The

Table 1.

Projection of Black Households, By Age of Head
Washington Metropolitan Area, 1975

Col. 1 Black Population Age Categories 1970	Col. 2 Numbers in 1970	Col. 3 Age Categories in 1975	Col. 4 Survival Rates	Col. 5 Numbers Surviving in 1975 (Col. 2 x Col. 4)	Col. 6 Migration Rates	Col. 7 Net Migration (Col. 5 x Col. 6)	Col. 8 Population in 1975 (Col. 5 + Col. 7)	Col. 9 Headship Rates 1975	Col. 10 Households 1975 (Col. 8 x Col. 9)
Under 5	73,246	5- 9	.994975	72,878	.0213	1,552	74,430		
5- 9	80,724	10-14	.997564	80,527	.0180	1,450	81,977		
10-14	79,045	15-19	.995106	78,658	.0359	2,824	81,489	.0342	2,787
15-19	67,850	20-24	.989472	67,136	.1511	10,144	77,280	.3347	25,866
20-24	68,560	25-29	.985591	67,572	.0907	6,129	73,701	.5472	40,329
25-29	59,707	30-34	.982733	58,676	.0286	1,678	60,354	.5823	35,144
30-34	48,392	35-39	.977173	47,287	.0233	1,102	91,009	.5974	54,369
35-39	43,311	40-44	.967491	41,903	.0171	717			
40-44	41,100	45-49	.954754	39,240	.0078	587	75,788	.5925	44,904
45-49	38,368	50-54	.937261	35,961					
50-54	32,575	55-59	.913910	29,771	.0031	168	54,209	.5958	32,298
55-59	27,443	60-64	.884367	24,270					
60-64	20,535	65-69	.846415	17,381	.0089	336	43,710	.5883	25,715
65-69	14,932	70-74	.793706	11,852					
70-74	9,729	75-79	.736026	7,161					
75 and over	11,523	80+	.601402	6,930					
Total	717,040			687,203		26,737	713,940		261,412

boundaries of the areas do not always correspond to the boundaries of metropolitan housing market areas, however. For example, they never cross state lines. Sometimes, also, several counties are lumped into one State Economic Area; yet not all of these same counties are included in the metropolitan area definition. However, a reasonable correspondence can be achieved in the great majority of cases. Jurisdictions which do not correspond usually have relatively small populations, so the numbers missed or added would not affect the rates significantly. In addition, where metropolitan areas cross state lines, State Economic Areas can usually be combined to achieve a good approximation. (Table 2 shows the State Economic Areas used in calculating migration for the six housing market areas in which minority market potential has been estimated as part of this project. In no case were the results unusable.)

Finally, published figures for migrants are given separately for males and females and for those who moved into and out of the area. This is excessive detail for our purposes in estimating households. The problem is solved, however, simply by adding the figures for the two sexes to obtain a total, and then subtracting the out-migrants from the in-migrants to obtain a count of net migrants. (This figure may be either positive or negative.)

The detailed procedure for developing and applying migration rates, to the projected population is as follows:

(1) Combine the data for the sexes of each age level.

(2) Compute the net number of migrants in each age category between 1965 and 1970 by subtracting out-migration from in-migration. If the number resulting in any age group is positive, there was a net in-migration to the area of that particular age group. If negative, net migration out of the area occurred.

(3) Calculate the migration rate for each group for this period by dividing the number of net migrants in each age category by a mid-interval population for that age category. Since the period for which migration data are available is five years prior to the census, in this case 1965-1970, the mid-interval statistics required are for year 1967. In order to determine the mid-interval population, an interpolation is performed for the year 1967 using census data for 1960 and 1970 4/ by individual age categories.

a. Subtract the number in the individual age category in 1960 from the number in 1970.

b. Multiply the difference by 0.7.

c. Add this result to the number for 1960 to obtain the estimated population in this age category for 1967.

d. To determine the net migration rates for each age category, the estimated population is divided by the number of net migrants in each age category. (Table 3 shows the calculation of migration rates for blacks in the Washington area.)

(4) These age-specific rates are then multiplied by each age category of the "aged" population distribution as adjusted for survival to the year of estimate. This produces the numbers shown in Table 1, Column 7. These figures are added to the same categories of the adjusted distribution, to yield a new population distribution adjusted for both survival and migration.

The resulting distribution is the projected overall population by age for the period of time for which market potential is to be estimated.

Step 4: Applying headship rates -- Since households, not individuals, are the market unit for housing, it is then necessary to convert the projected population distribution into a projection of households distributed by age of the head. This is achieved by applying "headship rates" to each population age category in the distribution, using data from the 1960 and 1970 censuses. 5/

As with the migration rates, data for deriving headship rates (i.e. the proportion in

Table 2.

STATE ECONOMIC AREAS USED IN CALCULATING MIGRATION FOR SIX HOUSING MARKET AREAS

Atlanta, Georgia Metropolitan Area:

Area B:	Clayton)	
	Cobb)	
	Dekalb)	Counties
	Fulton)	
	Gwinnett)	

Boston, Massachusetts Metropolitan Area:

Area C:	Essex)	
	Middlesex)	Counties
	Norfolk)	
	Suffolk)	

Chicago, Illinois Metropolitan Area:

Area C:	Cook)	
	DuPage)	
	Kane)	Counties
	Lake)	
	McHenry)	
	Will)	

Los Angeles - Long Beach, California Metropolitan Area:

Area F: Los Angeles County
Orange County

(Since Orange County is not part of this SMSA a slight adjustment factor was applied to delete Orange County from the analysis.)

San Antonio, Texas Metropolitan Area:

Area F: Bexar County

(Guadalupe County is part of this SMSA, but is one of the six counties which constitute another SEA. In 1970, it contained only 4 percent of the San Antonio SMSA population.)

Washington, D. C. - Maryland - Virginia Metropolitan Area:

Area A: District of Columbia -- Washington, D. C.

Area B: Maryland -- Montgomery County
Prince George's County

Area B:	Virginia --	Arlington County	
		Fairfax County	
		Alexandria)	
		Falls Church)	Cities
		Fairfax)	

(Prince William and Loudoun Counties, Virginia, also parts of the metropolitan area, are constituent portions of Area 5, a 13-county SEA; Charles County, Maryland is part of Area 3. These three counties contained 7 percent of the SMSA population in 1970.)

Table 3.

Calculation of Age-Specific Net Migration Rates for Black Population of Metropolitan Washington, 1965-1970

Age Category	Net Migrants	Population in 1967	Net Migration Rates
5- 9	1,539	72,211	.0213
10-14	1,211	67,172	.0180
15-19	2,016	56,165	.0359
20-24	8,769	58,022	.1511
25-29	4,775	52,634	.0907
30-34	1,295	45,233	.0286
35-39	976	41,809	.0233
40-44	658	38,553	.0170
45-54	515	65,425	.0078
55-64	136	42,665	.0031
65 and over	288	32,080	.0089

each age group who are heads of households) are unavailable past the last decennial census. However, long-term population and economic trends have resulted in increasing household headship rates for several decades. There is no reason to believe that recent developments have altered these fundamental trends at this point in time. Thus, we recommend using a procedure which extrapolates the trend in headship rates for each individual five-year age category between the 1960 and 1970 censuses ahead to the year for which the estimates are required. This procedure is governed by a mathematical extrapolation formula which appears complex, but is fairly simple to apply.

The general extrapolation formula is:

$$f(x) = \frac{f(a)\,(b-x) - f(b)\,(a-x)}{(b-x) - (a-x)}$$

Where: f is the headship rate

(x) is the year for which the headship rate is to be extrapolated

(a) is 1960, or the earlier of the two most recent census years

(b) is 1970, or the later of the two most recent census years

For the year 1975, this formula reduces to:

$$1975 \text{ Headship Rate} = \frac{(-5)\ 1960 \text{ Headship Rate} - (-15)\ 1970 \text{ Headship Rate}}{10}$$

Headship rates must first be derived separately for each age category and each year by dividing the number of individuals in the population of each separate age group by the number of households with heads of the same age. Using data for blacks aged 20-24 in metropolitan Washington, this procedure is:

$$\text{Headship Rate for 20-24 age group in 1960} = \frac{\text{Households with Heads 20-24 in 1960}}{\text{Population Aged 20-24 in 1960}}$$

$$= \frac{6,449}{35,449}$$

$$= .1819$$

$$\text{Headship Rate for 20-24 age group in 1970} = \frac{\text{Households with Heads 20-24 in 1970}}{\text{Population Aged 20-24 in 1970}}$$

$$= \frac{19,215}{67,697}$$

$$= .2838$$

The estimation of the 1975 headship rate for the 20-24 age group, using the extrapolation formula given above, is as follows:

$$1975 \text{ Headship Rate} = \frac{(-5)\ (.1819) - (-15)\ (.2838)}{10}$$

$$= \frac{-.9095 + 4.2570}{10}$$

$$= .3347$$

As the final step, the headship rates are multiplied by the numbers of individuals in the same age categories to obtain an updated distribution of households by age of head. (Table 1, Columns 8, 9, 10.) The sum of the numbers in this distribution is, of course, the total estimated number of black households as of the year for which the estimate is made.

Separate procedures are followed to produce updated household size and income distributions. These are described in Steps 5 and 6.

Step 5: Distributing Households by Size -- The number of persons in a household is an important ingredient in housing market analysis also, since they play a role in determining relative demand for dwellings of different sizes. Our next step is therefore to distribute the projected households by size categories. The procedure followed here is the same as for the distribution of households by age of head, i.e., extrapolation of recent trends using data from the 1960 and 1970 censuses. 6/ Each size category is projected separately.

This reliance on recent trends is justified not only by the fact that more recent data are not available at the local level, but also by the fact that the same demographic factors which were operating during the latter part

of the 1960s to affect current household size (declining fertility, rising age at marriage, increasing incidence of divorce, etc.) are known on the basis of national data to have continued well into the decade of the 70s. Thus, the recent decline in the proportion of households in the larger size categories and the increase in the proportion of smaller units can be assumed to have continued.

For each census year the percentage distribution of households must first be computed. Then, the percentage for each household size category is mathematically extrapolated to the period for which market estimates are being developed. The extrapolation formula is the same as that used to determine headship rates. For 1975, and one-person households, the formula is:

$$\text{Proportion of 1 Person Households in 1975} = \frac{(-5)\left[\text{(Proportion 1-Person Households in 1960}\right] - (-15)\left[\text{(Proportion 1-Person Households in 1970}\right]}{10}$$

Using actual data for the Washington metropolitan area:

$$\text{1 Person Households 1975} = \frac{(-5)(.145) - (-15)(.198)}{10}$$

$$= \frac{(-.7250) + (2.9700)}{10}$$

$$= .2245 \quad (22.45 \text{ percent})$$

The resulting percentages should total to 100 or close to that amount. If they do not, the work should be rechecked.

Each percentage is then applied to the total number of projected households obtained in step 4 for the year of study to produce a numerical distribution of households by size. (Table 4 shows the extrapolation of black households by size for 1975 in the Washington metropolitan area.)

Step 6: Distributing Households by Income -- The next step is to develop an income distribution for all households in the market area. As with age of household head and household size, each income group must be projected separately since the various categories are likely to be changing at different rates.

Again, the basic method for estimating household income involves short-range projections using the experience of the 1960-1970 decade, using data from the 1960 and 1970 censuses. 7/ At the time this report is prepared such a procedure still seems reasonable, since the rising money income trends of the 1960s apparently continued at least into the first part of the 1970s.

Before 1959 (1960 census) incomes can be matched with 1969 (1970 census) incomes, however, some adjustments are required due to differences in census procedures for the two dates. 8/ In the first place, the 1959 income categories reported in the 1960 census volumes are not the same as those used for reporting 1969 incomes in the 1970 reports. A problem of some concern in this regard is the fact that the highest published income category for black households in 1959 was $10,000 and above. Secondly, the household income count for 1959 was given separately for owners and renters in the published census report, thus requiring that the two columns be added together to get an income distribution of all households.

Another limitation, which causes serious problems in some areas, is the fact that 1959 household incomes were published by the Census Bureau for households of all "nonwhite" races combined, and not for black households separately. In most major market areas in the United States, this makes little practical difference in the calculations. Blacks constituted virtually all of the "nonwhite" population and any error introduced by substituting "nonwhites" for "blacks" will be insignificant. In a few areas such as Los Angeles or San Francisco, which have large Asian American populations, the error would be too large to ignore. Special adjustments to the income data are required for these areas. The method recommended for such adjustments is prescribed in Appendix A-2.

The steps for deriving projected household incomes from the distributions given in the 1960 and 1970 census reports are described below. (Table 5 illustrates the procedure, using data for the Washington area and for incomes in 1974).

(1) To make the computations more manageable, regroup the two income distributions for combined owner-renter households into fewer classes. The following size categories

Table 4.

Projection of Black Households By Size, Washington Metropolitan Area, 1975

Number of Persons Per Household	1960 Percent Distribution	1970 Percent Distribution	1975 Extrapolated Distribution	Distribution of 1975 Households
1 Person	14.5%	19.8%	.2245**	58,689
2 Persons	23.1%	23.3%	.2340	61,172
3 Persons	17.6%	18.0%	.1820	47,578
4 Persons	14.5%	14.5%	.1450	37,906
5 Persons	10.7%	9.7%	.0920	24,051
6+ Persons	19.4%	14.7%	.1225	32,024
Total	99.8%*	100.0%	1.0000	261,420

* Error due to rounding

**Percentages in this column have been stated as four-place decimals for ease in computation

Table 5.

Projection of Black Household Income,
Washington Metropolitan Area, 1975

Income Distribution	Col. 1 Household Income Distribution 1959 (1960 Census)	Col. 2 Household Income Distribution 1969 (1970 Census)	Col. 3 1970 Income Distribution Collapsed to 1960 Population	Col. 4 Rate of Change 1960 to 1970 Collapsed	Col. 5 Projected Income Distribution without Population Growth (1974 Incomes for 1975 Households)	Col. 6 Percent Distribution of Income--1975 Households	Col. 7 Additional Household Growth 1970-1975	Col. 8 Projected Income Distribution for 1975 Households
Less than $ 4,000	57,428	44,505	27,308	-.525	29,400	.1421	7,737	37,137
$ 4,000 - $ 6,999	40,161	45,924	28,179	-.298	39,954	.1931	10,514	50,468
$ 7,000 - $ 9,999	18,531	41,664	25,565	+.380	45,192	.2184	11,891	57,083
$10,000 - $14,999		44,068	27,040		54,387	.2628	14,309	68,696
$15,000 - $24,999	10,883	26,355	16,171	+3.222	32,521	.1571	8,554	41,075
$25,000 and over		4,461	2,737		5,508	.0266	1,448	6,956
Total	127,003	206,977	127,000		206,962	1.0000	54,453	261,415

Note: As in this example, small differences are to be expected in the sums of equivalent columns (as, for instance, Col. 1 vs. Col. 3, Col. 2 vs. Col. 5, and Col. 8 vs. Col. 10 of Table 1). These differences are due to minor errors introduced in the course of computation. If, however, these column totals should disagree by one percent or more, the work should be rechecked.

are suggested, and are compatible with other portions of the method.

Less than $ 4,000
$ 4,000 to $ 6,999
$ 7,000 to $ 9,999
$10,000 to $14,999
$15,000 to $24,999
$25,000 and above

The last three classes will, of course, have to be combined in the 1959 distribution. (Columns 1 and 2)

(2) The 1969 distribution is then "collapsed" to the size of the 1959 distribution. This is accomplished by dividing the total for 1959 by the total for 1969, and multiplying each class in the 1969 distribution (Column 2) by the resulfing proportion to get the results shown in Column 3.

(3) The rate of increase or decrease from 1959 to 1969 is then calculated for each income class. This is done by first subtracting the number in Column 1 from Column 3. The result is then divided by the figure in Column 1. The resulting rates are shown in Column 4.

(4) These rates are then applied to the unadjusted 1969 figures to produce a projected income distribution for the year of study. The proportion of the 1959-1969 change rate which is actually used will depend on the number of years in the future for which the projections are sought. For example, if the projections are for the next decennial census, the full percentage change will be used. If the projections are only to mid-decade, 5/10ths of the factor is used; if for 7 years, 7/10ths of the factor, and so forth. The resultant distribution will be one in which no allowance has been made for population growth or decline, either overall or in any individual income class since the 1970 census. It will also be one in which all households with incomes of $10,000 or more are lumped together.

(5) First, a 1974 income distribution for 1975 households without allowing for population growth is prepared. This is accomplished by using two slightly different formulae depending upon the direction of the rate of change as shown in Column 4. While the formulae and computations which follow may appear complex, the analyst will find that they can actually be performed in a few minutes using a hand calculator.

If the rate of change in Column 4 is negative, the formula is:

(Number in 1959) x (Percentage change + x/10 of the percentage change) + (Number in 1959) + (Number in 1969 - Collapsed number in 1969)

For example:

The calculation for the "less than $4,000" category in 1975 would be:

57,428 [-.525 + (5/10 x - .525)] + 57,428 + (44,505 - 27,308) = 29,372

If the rate of change is positive the formula is:

(Number in 1959)(Percentage change + x/10 of the percentage change +1) + (Number in 1969 - Collapsed number for 1969)

For example:

The calculation for the "$7,000 - $9,999" category in 1975 would be:

18,531 x [.380 + (5/10 x .380) + 1] + (41,664 - 25,565) = 45,192

The resulting figures are entered in Column 5. The income categories over $10,000 in 1969 are aggregated and the resulting total is distributed in Column 5 according to the proportions in the same categories in Column 2.

(6) The final step is to produce a projected income distribution which takes account of the increase (or decrease) in households which was projected earlier. To do this, the total projected growth or decline in households since 1970 is distributed among income classes in the same proportions as in the 1975 distribu-

tion without population growth (Column 7). The results for each income class are added to or subtracted from the "no-growth" income projections (Column 8).

The projected change in households is obtained by subtracting the total of Column 5, Table 5 from the total of Column 10, Table 1. In this case, the resulting difference to be distributed is 54,453.

All in all, the income estimation procedure is rather conservative. It assumes that the rate of income improvement for minorities during the 1970s has occurred at the same average rate as between the 1960 and 1970 censuses. There is good reason to believe that this improvement occurred at an accelerating rate during the 1960s. The method will probably tend to err, if at all, in the negative direction -- underestimating the recent rate of income growth. In this fashion, it tends to protect against overestimation of the market's capabilities.

Stage 2: Estimating the Number and Characteristics of Households Potentially in the Market for Housing

The procedure up to this point has been directed at estimating the number and characteristics of all black households, and not just of black households likely to enter the housing market. The potential market makes up a selective sub-group of the total household "universe" which will not only be smaller than the universe, but is likely to differ from it in important ways.

Stage 2 of the procedure is therefore directed at estimating the number and characteristics of those black households out of the total household universe which are likely to be seeking a change in their housing situation during the time period being studied. These households we may identify as the potential mover population. They may not actually become movers, of course. Whether or not a household changes its place of residence, despite its desire to do so, will depend also on the choices and options provided in the housing supply. In this method, these supply constraints are dealt with in a separate step.

Basis of the Method -- The method employed here uses households which have moved in the recent past as a surrogate for those likely to move in the near future. Their characteristics and behavior are measured and assumed to apply to the potential mover population. In other words, the method measures actual market behavior rather than anticipated market decisions. The major disadvantage in this method is that it does not take into account possible changes in consumer behavior since the most recent measurements of that behavior were taken. The potentialities for error increase in proportion to the amount of elapsed time between the period used for baseline measurement and the period for which the estimate is sought. It is also likely that the range of error will be greater for minorities than for the majority population since recent changes in the legal framework governing equal opportunity in housing will have more effect on minorities' situation in the housing market. These effects, however, will vary from one market area to another, and the local analyst should apply his own insights to the results for his area.

We believe, however, that the likelihood of error that is significant from a marketing standpoint is relatively small. While it is quite true that homeseeking preferences and behavior will change over time, the period over which projections must be made is usually relatively brief. Moreover, homeseeking behavior is closely related to those characteristics of households for which detailed projected distributions have been made.

In the recommended method, the analyst determines the ratios between such characteristics in the 1970 recent homeseeker population and the same characteristics of the 1970 household universe. He then employs these ratios as estimating parameters to determine the "profile" of the homeseeker population as of the year of estimate, taking into account changes in the composition of the total household universe which have occurred in the interim. This "profile" also includes one key aspect of market behavior: whether the homeseeker is likely to buy or rent.

Published census data on the mover population are extremely limited, and it was therefore necessary to turn to unpublished data from the 1970 Census Public Use Sample Tape Files to develop these ratios initially. 9/ These files contain information on the characteristics of households by the year the head moved into the housing unit. Extensive computer runs from the files, specially formatted to the Center's specifications, were produced

for each of the six housing market areas in which the method was tested in order to obtain data on the characteristics of minority households whose head moved in the 47 months prior to the 1970 census. Ratios were then developed, showing the relationship between black and Spanish-speaking households which moved shortly before the census and all black and Spanish-speaking households enumerated in 1970 for the household distribution of each important characteristic. These ratios were then applied to the projected estimates of the household population for each area, produced in stage 1, by each category of the distributions in turn. This process resulted in estimates of the size and characteristics of the minority homeseeker population in the period of study.

On the basis of the experience gained from the six test areas, the Center next sought a practical means by which the analyst not equipped with a computer and a substantial amount of funds could make use of census data on the mover population. This procedure involved two steps:

1. Testing the relationships -- First, the Center performed a statistical analysis to determine whether rates of movership could be reliably predicted using only published census data on the households and housing units of a metropolitan area. In this manner the Center sought to test whether the general relationships between the mover household population and the total household base were sufficiently stable from one market area to another to develop methods for estimating the mover population from universe data. Correlation and regression analyses were performed using data for 34 metropolitan areas, all of which had black or Spanish-American populations exceeding 100,000 at the 1970 census. Published census data on households and housing stock were correlated against published movership rates for owners and renters separately in each of the following groups: (a) the total population, (b) the black population, and (c) the Spanish-speaking population. The results provided ample justification for proceeding further. 10/ Briefly, the findings were as follows.

   a. Very high and stable relationships appeared between the movership rates and the published census variables for most of the subgroups studied. R^2 values (a measure of strength of relationship) as high as .876 were established for prediction equations incorporating several variables. Levels this high are virtually unknown in social science data.

   b. The prediction equation for movership among black owners was the only one which yielded an R^2 that was less than exceptionally high -- and here the R^2 value was .458, still a fairly respectable level. The comparatively low predictability in this area, the Center believes, is probably a reflection of the dynamics of the market during the late 1960s -- with many black households attempting to move into home ownership status and facing varying degrees of difficulty in different geographic areas.

   c. Among the variables which proved most predictive of movership were those on which the method outlined has placed particular stress -- including population size, rate of growth, age structure, household size, and income.

   d. Also important in the prediction equations for movership were vacancy rates (which are not estimated as part of this methodology, but are often available from postal vacancy surveys or can be estimated from local data). Region of the nation also proved significant. For this reason, the ratio-estimating method finally adopted uses average ratios by region.

2. Determining the ratios -- The Center then had a further computer run performed to obtain census data from the 1970 unpublished tapes on the mover household population in 47 metropolitan areas with large black, and Spanish-speaking populations. Most of these had populations of one or both groups exceeding 100,000 in 1970. These data covered the three key

areas of household characteristics -- age of head, size, and income. Ratios were then computed for the relationships between the mover household population and the total household population, by individual category of age, income or size. These ratios were developed separately for owners and renters in the black and Spanish-speaking populations of each area. The distributions of these ratios were then analyzed to test for the existence of common patterns. A considerable degree of similarity was found in the patterns of relationship of movers to the household universe, especially for black renters and for both owners and renters in the Spanish-speaking population. There was considerably more divergence, however, in the patterns for black owners, as would be expected from the comparatively low predictability found in the regression analysis for movership rates in this group.

We believe that this whole area deserves considerable further examination -- with an aim toward determining not only the precise nature of the relationships between movers and all households, but also the differences among these relationships in different areas and for different minority groups. A thorough analysis of the less stable values found for black owners might prove of particular value to HUD in its enforcement program, since it seems quite possible that these variations result from differential kinds and degrees of discriminatory treatment in the market.

However, these questions would require considerable further research. The purpose of this project was to produce a workable procedure for general use in market estimation, and the resources available were adequate only for that purpose. Thus, we adopted an approach which makes direct use of the empirical data developed by the Center with regard to the relationship of movers to the household universe in 47 major market areas.

Application -- The method recommended by the Center for estimating the size and key characteristics of the minority market for any given metropolitan area draws upon the data developed in the analysis just described. For each of the 47 metropolitan areas with large minority populations for which actual 1970 data on mover populations were obtained, the Center derived ratios of mover households to total households.

Average ratios were then computed for areas in four major regions. An examination of the ratios for individual areas indicated that they clustered quite closely around the regional averages in most cases. Where they deviated, the differences appeared likely to be due to local market constraints which might or might not persist over time. There were, however, some consistent differences among regions, as could be expected from the results of the regression analysis discussed previously. For purposes of estimating the most probable characteristics of the minority homeseeker market in any given area during a chosen time period, therefore, the average ratios for the region in which that area was located appeared most suitable. These average ratios are reproduced in Appendix A-3.

An example of the procedure, using data specifically on black households from the Chicago area, and estimating the potential mover population for 1975, is shown in Table 6. Instead of the regional average ratios these computations use the ratios initially obtained specifically for Chicago as one of the six market areas in which this methodology was developed and tested. The application procedure is identical for all other market areas, except that the regional average ratios shown in Appendix A-3 are used instead.

In Column 1 of the table, the analyst inserts the estimated updated income distribution for all black households in metropolitan Chicago. In Column 2, he inserts the 1970 ratios for black recent renter-movers to all black households in metropolitan Chicago, by income category. Multiplying Column 1 by Column 2 yields the figures in Column 3. These figures give the estimated income distribution for black households likely to be seeking rental accomodations in metropolitan Chicago in the 27 months prior to the end of the estimating period -- in this case, Spring 1975.

In Column 4 of the table, the analyst inserts the equivalent income ratios for recent black owner-movers vs. the black household universe in Chicago. Again, these are multiplied by those in Column 1 to yield the distri-

Table 6.

Illustrative Application of Estimating Ratios to Provide Income Distribution of Mover Households
(Metropolitan Chicago - Black Households, Spring 1974-Spring 1975)

Income	Col. 1 1975 Household Distribution	Col. 2 Ratios Renter-Movers To Total	Col. 3 Potential Renters (27-Mo. Period) (Col. 1 x Col. 2)	Col. 4 Ratios Owner-Movers To Total	Col. 5 Potential Owners (27-Mo. Period) (Col. 1 x Col. 4)	Col. 6 Adjustment For 12 Month Period	Col. 7 Potential Renters (12-Mo. Period) (Col. 3 x Col. 6)	Col. 8 Potential Owners (12-Mo. Period) (Col. 5 x Col. 6)
Less than $ 4,000	80,448	.3579	28,792	.0162	1,303	.444	12,784	579
$ 4,000 - $ 6,999	72,199	.3535	25,522	.0316	2,281	.444	11,332	1,013
$ 7,000 - $ 9,999	86,588	.2906	25,162	.0741	6,416	.444	11,172	2,849
$10,000 - $14,999	101,289	.2551	25,839	.1198	12,134	.444	11,473	5,387
$15,000 - $24,999	53,690	.1656	8,891	.1656	8,891	.444	3,948	3,948
$25,000 and over	7,578	.0833	631	.1111	842	.444	280	374
Total	401,792		114,837		31,867		[illegible]989	14,150

bution in Column 5. This is the estimated income distribution of black households likely to be seeking homes for sale in metropolitan Chicago during the 27 months prior to Spring of 1975.

To convert these distributions for 27-month periods into annual (or 12-months) figures, the analyst simply multiplies each number by the adjusting ratio 12/27, or .444, yielding the distributions shown in Columns 7 and 8 of the table. These are the estimated income distributions for potential black renters and owners, respectively, likely to be in the housing market in metropolitan Chicago during the period Spring 1974 - Spring 1975.

The ratios given in the Appendix for general application, as indicated previously, are broad regional averages computed by the Center from the mover data for the 47 major areas. Their application is identical to the example. To use them, the analyst merely determines the broad region in which his area is located, inserts the appropriate regional average ratios obtained from the Appendix into his working table, and performs the computations just described.

The same procedure (using different sets of ratios, drawn from Appendix A-3 in each instance), is performed to obtain distributions of prospective renters and owners by age of head and household size.

The total numbers of mover households as obtained, separately in this procedure by age, size and income will not always agree. The main reason is that the procedure uses different estimating procedures in tandem, and all of the results produced at any stage of the process are estimates. When a set of estimated numbers for the total household population are multiplied by a set of estimating ratios for the relationship of mover households to the total, discrepancies will almost inevitably appear between the totals for different characteristics -- age vs. income, for example. These discrepancies will usually be fairly minor, and can be disregarded for practical market analysis purposes. In the case of Chicago, the totals disagree by about six percent, and this is a fairly typical case.

The differences may also reflect conflicting tendencies in a dynamic market, and the analyst may wish to examine them from this standpoint. For example, the estimated total of potential homebuyers produced from the income distribution by this method will often be larger than the totals produced from the distributions by age of head or household size. It is likely that these differences reflect real but contradictory market forces. As incomes move up, which they have in recent years, people are more likely to move into homeownership status. On the other hand, small households and young households are more likely to be renters than owners, and households have been getting both smaller and younger. Thus, the market is being pulled in two directions at once. Just how these conflicting tendencies will be resolved is in question, but a certain proportion of homeseekers could move either toward ownership or toward rental housing depending on the alternatives provided in the market place.

If, however, the discrepancies are so large in any instance as to make the results difficult to reconcile, which may sometimes be the case, the numbers in the deviant distributions can be adjusted. This is done simply by computing the ratio of the total of that distribution to the average of the totals for other distributions which are deemed to be satisfactorily congruent, and adjusting all figures in the deviant distribution by this ratio. These adjusted estimates will then be fully compatible with the rest. All will still remain estimates, however, and the fact that the discrepancies have been adjusted should not be permitted to obscure that fact. In any case, the analyst should round all final results at least to the nearest 100 households in any presentation of the results for use by others.

In general, if the analyst wishes to adjust discrepancies, we recommend adjusting the age and size distributions to the total for the income distribution, since the income distribution is the more important from a market estimation standpoint.

Stage 3: Estimating Key Aspects of Housing Choice: Price and Size

In Stage 2 of the work, the analyst has determined several key characteristics of potential black homeseekers for the period for which he is analyzing the market. He knows their number as well as their distri-

bution by age of head, household income, and household size. He also has estimated one attribute of their likely behavior in the market: how many will probably seek to buy or to rent, also broken down by age of head, household size, and income.

At this juncture the analyst may want to take a careful look at the results in terms of their market implications. In most areas, he will probably find that a sizable number and proportion of black households who are likely to be in the market have attained incomes that are in the brackets of $10,000 and above -- although a large number will often remain in the lower-income categories. The analyst will also find, in all likelihood, that a majority of the black prospective mover households are quite small in size, and thus can be accommodated in (although they may not always prefer) smaller units. Third, he will probably find that a large proportion are young households just starting out, and thus likely to be in the market more than once before they finally settle down.)

In concert with these characteristics, the figures will probably show that most are likely to be in the rental market. Nonetheless, in many areas with substantial minority populations, a sizable enough number will also be seeking homes for sale to make the minority market of potential interest to developers of new sales housing.

For many purposes, this amount of knowledge may be sufficient. However, the analyst may wish to pursue the analysis further, in an effort to evaluate these potential homeseekers' likely behavior relative to prices to be paid and size of units to be acquired.

To estimate potential market behavior, the Washington Center again turned to the unpublished data in the 1970 Census Public Use Sample tapes and used recent movers as a surrogate for potential movers. First for the Washington metropolitan area, then for the five additional areas in which the procedure was developed, special computer tabulations were obtained which showed the relationship of the movers' housing units to all units occupied by black households in terms of housing values, rent levels, and number of rooms. These were cross-tabulated with the income distribution, in order to show how various income groups behaved. The tabulations were prepared separately for total, black, and Spanish-speaking populations.

Although there were some important variations, the ratios for the six individual areas revealed a substantial similarity of pattern within each ethnic group. The relationships between rent and incomes, for example, tended to cluster as might be expected from the fact that many people tend to spend roughly similar amounts of their income for housing. The variations from one area to another were indicative of price differentials in the housing stock, and were also such as to suggest differences in availability of housing to minorities in different areas. Within an individual area the variations between groups probably reflected differences also in housing opportunities between the minority and majority. A further examination of these relationships in a larger number of areas would not only have been useful in improving our understanding of market behavior in this project, but might also prove of substantial value to HUD in understanding differences in discriminatory patterns from area to area. Such an examination, however, was beyond the scope and resources of this effort.

For purposes of this project, matrix tables were developed on the basis of the experience of the six test areas, for black and Spanish-speaking potential homeseekers. (Examples are presented in Appendix A-4.) For each group, the tables show the proportion of recent homeseekers within each income category who acquired housing at the specified levels of value, rent or size.

To use these matrix tables, the analyst merely multiplies each cell in the first row of the matrix by the previously estimated number of black or Spanish-American potential homebuyers or renters at the income level represented by that row in the area for which he is estimating. The same procedure is followed for each row or income level in turn. The resulting figures are then summed for each of the columns in this new table. This produces an estimated distribution of rent levels (or value levels, or number of rooms) likely to be sought by the black or Spanish-speaking minority homeseekers in the area in question for the period in which the estimates are made. (Table 7 shows the distribution of black potential renter-movers in the Washington metropolitan area for the period Spring 1974 - Spring 1975.)

The figures which can be prepared using the matrix procedure should be clearly recognized for what they are: rough esti-

Table 7.

Distribution of Black Renter Movers Spring 1974-Spring 1975 By Income and Rent, Washington Metropolitan Area

Income Distribution	Under $80	$80-$99	$100-$119	$120-$149	$150-$199	$200-$249	$250-$299	$300 and Over	Total
Less than $ 4,000	1,957	1,293	1,363	1,014	559	140	140	35	6,501
$ 4,000 - $ 6,999	800	1,905	2,514	2,399	876	267	38	0	8,799
$ 7,000 - $ 9,999	580	1,450	2,031	2,612	3,095	97	97	97	10,059
$10,000 - $14,999	140	1,375	932	2,273	2,824	524	281	0	8,349
$15,000 - $24,999	77	153	153	768	1,075	384	230	384	3,224
$25,000 and over	94	94	94	0	0	94	94	0	470
Total	3,648	6,270	7,087	9,066	8,429	1,506	880	516	37,402

mates based on the generalized experiences of minority homeseekers in several key market areas in various parts of the nation during the period just prior to the 1970 census. Unlike the estimates of key market characteristics discussed earlier, they also intermingle the effects of market preferences and options made available in the local housing supply. Variations in these options from one area to the next may make a considerable difference in the actual housing choices of the minority homeseeker.

Shifts over time in the overall availability of the housing stock and the terms on which it is available may also play a role. Two aspects of the current housing situation -- recent changes in the legal framework governing availability of mortgage credit, and recent rapid escalation of housing prices and rents -- suggest that caution should be exercised in applying data for minority movers during the period prior to the 1970 census in estimating the present market behavior of minority households. For this reason, we recommend that the analyst read further before reaching a decision as to how to proceed.

An analysis by the Center of housing value/income data from the 1970 census for recent movers from the Washington area revealed that a rather striking difference existed between the black and white populations of that area in housing expenditure patterns relative to incomes. This difference is illustrated in Figure A. This figure compares the value distributions of houses owned by black and white recent movers in the income bracket between $10,000 and $14,999. (Any other income category would show similar results.) With income and thus capacity to pay for housing held fairly constant and equal for the two groups, whites who bought homes in the 27-month period just prior to the last census acquired dwellings of considerably higher value than blacks.

The peak of the distribution of housing values for whites with $10,000-$14,999 annual incomes falls between $25,000 and $34,999 -- approximately the level which would be expected from the current criterion for mortgage eligibility of twice annual income, assuming a minimal down payment in most cases. Blacks in the $10,000-$14,999 income group, on the other hand, bought houses valued at considerably lower price levels overall. The peak value for this group was under $20,000, with nearly 60 percent of all black homebuyers in this income category purchasing houses at this relatively low value level. A similar pattern of racial difference, though less striking, was evident in the case of rents.

In an effort to understand the factors underlying this difference, the Center had a series of special printouts made from the 1970 census tape data relating value and rent distributions to the distributions of income for household heads alone; for head-spouse incomes; and for total incomes. These data were not completely analyzed, but examination indicated that for blacks the pattern of housing expenditures generally had a closer relationship to the income distribution of household heads than to the income of both spouses in cases where both spouses worked. Working wives, of course, were more common among blacks than among whites.

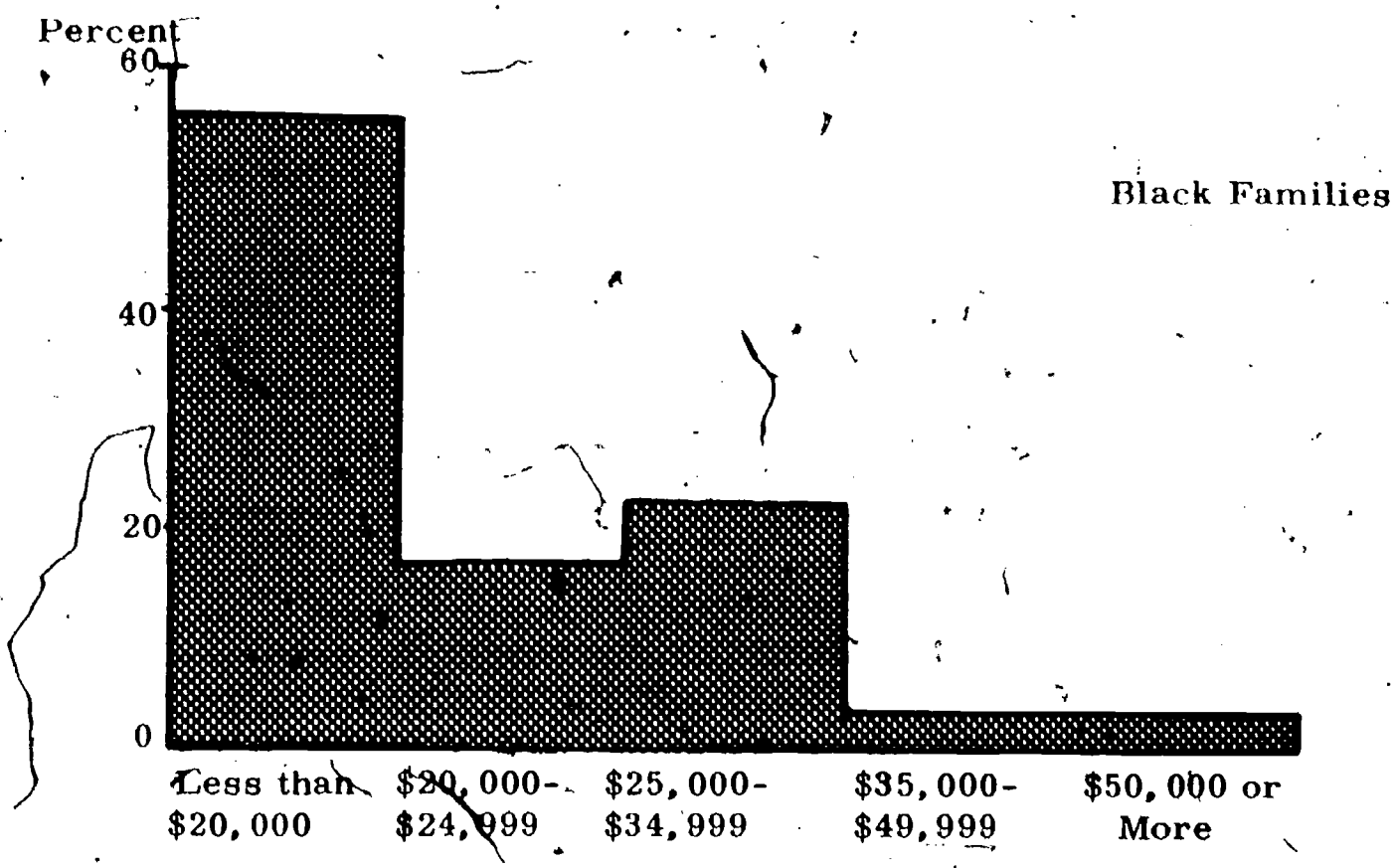
Unfortunately, the findings were not as clear-cut as might be wished, partly due to unavailability of data on size of mortgage and to various other limitations in the census results. A special analysis of data on black veteran homebuyers in Washington in 1972, performed by the Center using data obtained under a special cooperation agreement with the U. S. Veterans Administration, clarified the matter further. Data on size of mortgage were available for this group.

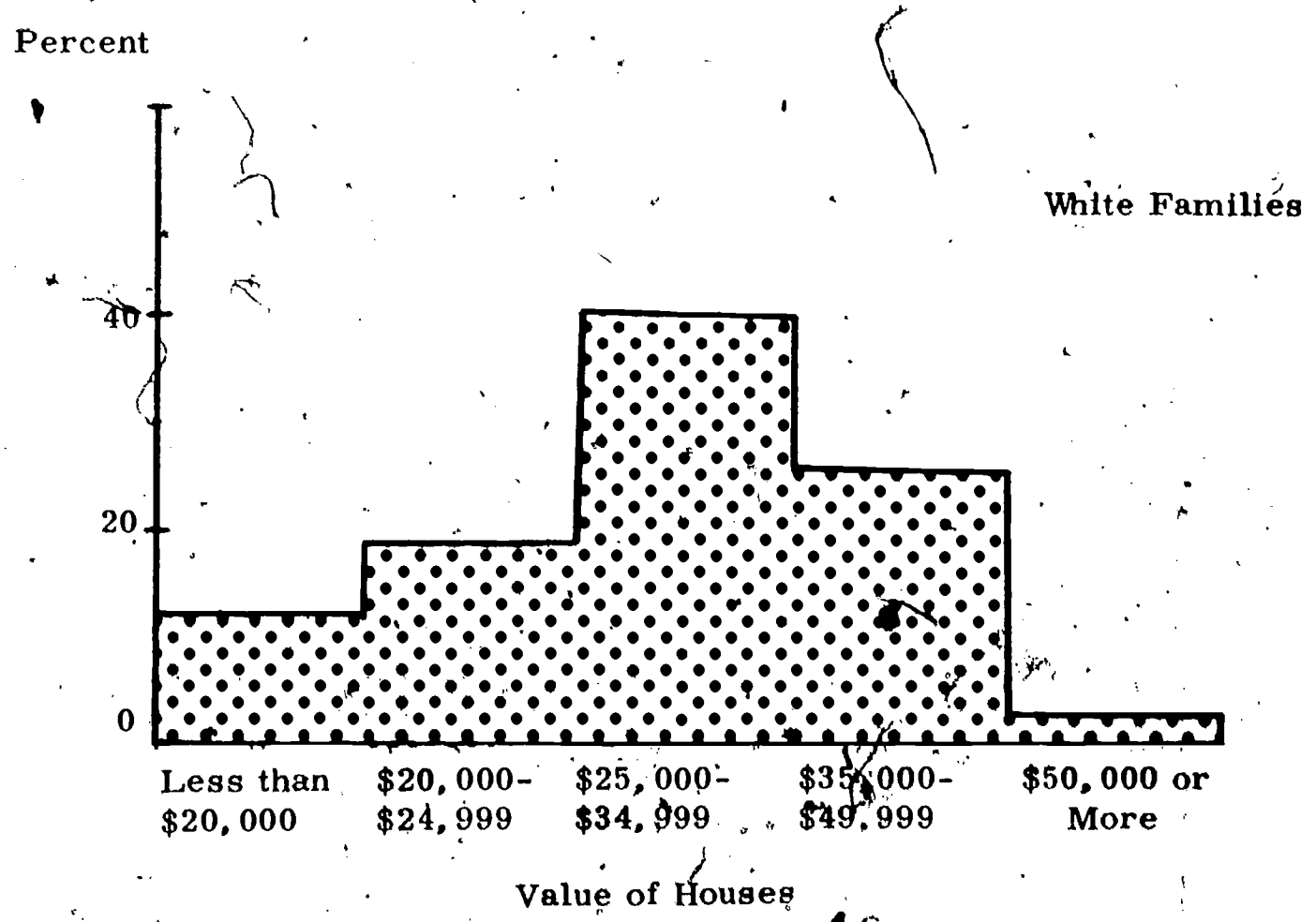
For all black veterans, the ratio of mortgage loan to total family income was 1.59. For veteran families with working wives (who comprised 65 percent of all black veteran homebuyers), the mortgage/income ratio was only 1.43. For veteran families where the wife did not work, it was 2.07 -- almost exactly the value expected.

Thus, the data at our disposal suggest that strict application of standards for discounting the incomes of working wives in determining credit eligibility were a major reason for the pattern of comparatively low housing expenditures relative to incomes among black homebuyers in the late 1960s and early 1970s. The available data also suggest (though they do not prove) that these standards may have been enforced somewhat less stringently for whites than for blacks. (The apparent tendency to take only the husband's income into account in determining capacity to pay for housing in the case of blacks was probably the practice of many landlords as well as mortgage lenders.)

FIGURE 1

Value Distribution of Houses Owned by Black and White Recent-Mover Families With Incomes of $10,000 to $14,999, Metropolitan Washington 1970





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Recently, differential treatment of women's incomes in determining mortgage eligibility has been outlawed. Assuming that mortgage lenders comply, and that housing options are made available that are appropriate to their economic capabilities, black homebuyers can be expected in the future to undertake patterns of housing expenditure relative to total family income much more like that of the white majority. If this is the case, it seems more reasonable for the analyst to assume that previous relationships of housing expenditure to income no longer apply. Most minority homebuyers can be expected to purchase homes priced at twice their annual incomes plus downpayment. In view of the fact that they have not had the opportunity to acquire the same assets, minority homebuyers probably will not acquire as many houses priced at well over the two times income level as members of the majority; but their pattern will probably approach that of the majority in other respects.

Thus, the analyst might construct tables of values based on capacity to pay, using the usual criteria of twice annual income for mortgage eligibility and 20 percent of monthly income for rent with fair assurance that minority homebuyers will move increasingly toward that pattern in the period immediately ahead -- assuming that the laws are obeyed both with regard to nondiscrimination in selling and in credit availability. With regard to rents, current federal law does not prevent the landlord from discounting the wife's income; thus, there may be a tendency for blacks to continue to lag behind whites in this respect, at least until this potential source of inequity is removed.

Such a table is shown, using the estimated income distribution of black potential homebuyers for metropolitan Atlanta, Georgia in the period Spring 1974 - Spring 1975. (Table 8) The analyst will note that it shows considerable potential for home purchase even at the higher price levels. Of course, these figures assume that the households will be able to meet credit requirements. Assuming that these requirements are applied equally to blacks as to whites, and that wives' incomes are fully counted, most should be able to do so. (Note that the actual purchase prices would be somewhat higher than indicated, since these dollar figures do not include down payment).

A comparison of this distribution with the estimates produced by applying the matrix based upon recent mover behavior discussed earlier shows a considerably higher distribution of values from the "affordable mortgage" approach. (Table 9). The two columns show the probable range in market performance of black potential homebuyers -- with the lower figures in the right-hand column indicating the market potential under credit conditions existing as recently as 1970, and the higher figures in the left-hand column indicating the potential under the new legal protections and assuming that credit requirements are applied equally. Probably the true figures will lie somewhere between the two columns for the next few years.

However, in estimating the minority market's potential for participation, we recommend that the analyst employ the approach based on "affordable mortgages" and "affordable rents" rather than on recent mover behavior from the 1970 census. Another reason for preferring this approach is the rapid escalation of housing prices since the 1970 census, which will tend to force many households -- both minority and majority -- to pay prices and rents closer to the maximun affordable with their incomes.

Stage 4: Estimating Choices in Location

One further question related to housing choice is the locational decisions likely to be made by the potential black homeseeker market. How much, for example, of the potential housing demand from blacks can be expected to be directed toward housing in suburban areas, and how much in central city areas? How much in desegregated settings, and how much in housing and neighborhoods which are either heavily black or changing rapidly from white to black -- the traditional racial "ghettos" and their recent extensions? The numbers are not likely to be simply a reflection of the numbers of black homeseekers who can afford housing in a certain price class. Instead, they will probably reflect the interaction of economic demand potential with a complex set of forces and counterforces having roots in the past, but undergoing rapid change in the present.

These forces are both internal to the minority homeseeker and imposed from outside. They are positive as well as negative. They include such concrete factors as residual discrimination and the reality of bad housing

Table 8

Estimated Mortgages Affordable By Black Potential Homebuyers
Atlanta Metropolitan Area,
Spring 1974 -Spring 1975

Mortgage Size (based on assumption of 2x annual household income for mortgage, and sufficient assets in hand to meet downpayment requirements)		Number of Buyers
Less than $20,000	(Income under $10,000)	1,354
$20,000 - $29,999	(Income $10,000 - $14,999)	2,524
$30,000 - $49,999	(Income $15,000 - $24,999)	244
$50,000 or more	(Income $25,000 and above)	72

Table 9.

Comparison Of Estimated Affordable Mortages With Values Of Homes Likely To Be Acquired By Black Potential Homebuyers Based On Experience Of Recent Movers At 1970 Census
Atlanta Metropolitan Area,
Spring 1974 - Spring 1975

Amount of Mortgage	Number of Affordable Mortgages	Housing Values based on 1968-1970 Experience
Less than $20,000	1,354	2,974
$20,000 - $29,999	2,524	1,022
$30,000 - $49,999	244	198
$50,000 and over	72	0

and neighborhoods in many traditional situations. They also include such intangibles as desire for status and recognition, concern for one's children's future, and fear of ostracism or hostile action from neighbors.

The current strength and even the exact nature of these forces is impractical to measure, at least with existing techniques. The best that practically can be done is to attempt to assess their overall impact in terms of the minority market's actual behavior in residential movement. Even this task poses severe technical difficulties. The Federal Fair Housing Act was not passed until 1968. It did not achieve full coverage until 1970, the date of the most recent federal census which provides the last comprehensive benchmark for residential change. It is not too surprising, then, that a comparison of the 1960 and 1970 census results shows comparatively little change for most areas.

The Evidence for Washington -- In an effort to gain useful insights into the nature and magnitude of recent changes in one metropolitan area, the Center examined the unpublished 1970 Census One Percent Public Use Sample data for information on locational choices made by recent movers in the Washington metropolitan area. The locational specificity of the tape data is limited. As already noted the tapes are available only for counties and groups of counties with populations totalling 250,000 or more. In some areas this makes them practically useless. In the Washington area, nonetheless, it is possible to distinguish not only between central city and suburbs but also among some major suburbs.

We also examined the 1972 data on black veteran homebuyers in the Washington area for insights into the question of locational preferences. In combination, these two data sources yield some indication of residential trends against which the analyst may be able to evaluate the somewhat less comprehensive data likely to be available for most other areas.

The analysis differentiated among three different groups of black families: (1) those black residents of the area which had last moved during the period from January 1968 until the census in April 1970; (2) those which moved during the period 1965-1967; and (3) those which moved prior to 1965. The data were further broken down by place of residence after the move between the District of Columbia (the area's central city) and the suburbs.

As Table 10 shows, the census data reveal a clear and rather dramatic pattern of residential change over a brief period of time. During the latter half of the 1960s, the movement of black families to Washington's suburbs accelerated rapidly. The acceleration was most marked for homeowners and families with higher incomes. By the 1968-1970 period, a substantial majority of black households seeking home ownership found homes in the suburbs.

Of all black families (including both renters and owners of all income levels) who resided in the area as of 1970, and who had last moved before 1965, 18 percent had found homes in the suburbs and the rest in the District of Columbia. Of all those who had last moved between 1965 and 1967, a slightly higher percentage -- 20 percent -- found homes in the suburbs. For those who had last moved between 1968 and 1970, the suburban proportion increased sharply to 30 percent. Still, of all black families who moved in that most recent period, over two-thirds had found homes in the central city.

The trend toward suburban residence was much more marked among homeowners, however. Of all black families owning homes in the Washington area as of 1970 who had moved to their present homes before 1965, 22 percent lived in the suburbs and the rest in the District. Among homeowners who had last moved in the 1965-1967 period, the percentage residing in the suburbs had increased to 40 percent. And among black homeowners who had last moved between 1968 and 1970, the suburban proportion had grown to a 55 percent majority.

Table 11 shows the pattern for black homeowners with incomes over $10,000 annually. For these families, the trend to suburban residences was still more rapid, rising from 25 percent of those who had moved prior to 1965 to 59 percent of those who had last moved between 1968 and 1970.

Among black renters, a trend toward suburban residence was also in evidence, though less marked. Nonetheless, the influence of economic level was clearly apparent among renters as well as owners.

Summing up, the unpublished census data

Table 10.

Patterns Of Residence For Black Families By Recency Of Move
Washington Metropolitan Area, 1970 Census

	District of Columbia		Suburbs	
	Number	Percent	Number	Percent
Last Moved 1968-1970				
Owners	4,400	45%	5,300	55%
Renters	36,400	75%	12,100	25%
Total	40,800	70%	17,400	30%
Last Moved 1965-1967				
Owners	6,200	60%	4,100	
Renters	24,000	87%	3,600	13%
Total	30,200	80%	7,700	20%
Last Moved before 1965				
Owners	28,000	78%	8,100	22%
Renters	21,700	89%	2,700	11%
Total	9,700	82%	10,800	18%

Source: U. S. Bureau of the Census, 1970 U. S. Census of Population. One Percent Public Use Sample Tape Files. Special tabulations prepared to specifications of the Washington Center for Metropolitan Studies.

Table 11.

Patterns Of Residence For Black Owners With Incomes
Of $10,000 or More, By Recency Of Move
Washington Metropolitan Area, 1970 Census

	District of Columbia		Suburbs	
	Number	Percent	Number	Percent
Last Moved 1968-1970	2,700	41%	3,900	59%
Last Moved 1965-1967	3,900	64%	2,200	36%
Last Moved Before 1965	15,200	75%	5,200	25%

Source: U. S. Bureau of the Census, 1970 U. S. Census of Population. One Percent Public Use Sample Tape Files. Special tabulations prepared to specifications of the Washington Center for Metropolitan Studies.

for metropolitan Washington show that during the latter half of the 1960s there was a rapidly accelerating trend toward suburban residence among blacks -- with the rate of acceleration being greater for homeowners than for renters, and higher for upper income households than for all income categories together. These data suggest a strong linkage between economic progress and propensity to seek suburban housing. What the census data do not show is to what degree this tendency merely represents an extension of the existing black concentration across suburban boundaries and to what extent it represents a shift toward desegregated residential patterns.

In attempting to determine whether the trend toward suburban movement of blacks had continued in the first part of the 1970s, and also to what degree this movement represented a trend toward desegregation, the Center turned to a unique source: records maintained by the U. S. Veterans Administration on veterans purchasing homes with the aid of VA mortgage guarantees. Data on all Washington area black veterans using VA mortgage benefits during the year 1972 were obtained by the Center under a cooperative agreement with the Veterans Administration.

Nearly two-thirds of the black veteran homebuyers in 1972 (66 percent) had purchased homes outside the District of Columbia. This was a higher proportion than among all black homebuyers in the 1968-70 period, 55 percent of whom had bought in the suburbs. It was higher also than among black homebuyers in the 1968-70 period who had $10,000-plus incomes -- 59 percent of whom bought in the suburbs. The black veterans in our sample, about 90 percent of whom had incomes over $10,000, are probably fairly comparable to the latter group. Thus, the veteran data indicate a continued progressive trend toward suburban residence at about the same rate as the late 1960s.

A highly location-specific analysis was also performed from the veteran data in an effort to determine whether this trend represented a movement toward desegregated patterns. The data were coded by both the census tract of the veteran's previous address and of the address of the new home just purchased with VA benefits. Thus, it was possible to analyze the change in terms of the specific location and the general neighborhood characteristics of both old and new residences to achieve an understanding of movership patterns that is not possible using census data.

Table 12 shows one of the results of the analysis. The largest proportions of veterans moved to a census tract which had roughly the same percentage of blacks as the one they left. This relationship is indicated by the underlined percentages on the diagonal of the table. Most of the rest moved to a census tract with a smaller percentage of blacks than the one they left, as indicated by the percentages below the diagonal. Only relatively small numbers of veterans moved to a tract with a larger black percentage than their previous tract of residence. These percentages are above the diagonal.

However, this table does not tell the full story. Since the numbers of veterans who previously lived in tracts with substantial black percentages were much larger than those whose previous residence was in tracts with small black proportions, almost half (46 percent, or 363 out of 808) of all the black veterans moved to tracts which had <u>smaller</u> black percentages than before. The second largest proportion (40 percent or 339 veterans) moved to tracts with <u>about the same</u> percentage of blacks as previously. And only 14 percent or 106 veterans moved to areas which were <u>more heavily black</u> than before.

Prince George's County, the predominant suburban area of black residence at the 1970 census, was also the destination of the largest single group of black veterans -- 383 of the total of 808. The District of Columbia, the area's heavily black central city, ranked second with 294. The remaining 131 veterans -- 16 percent of the total -- went to other suburbs in the Washington area, most of which had relatively small black proportions in 1970. Even within Prince George's County, however, the tendency of the black veteran homeseekers to move outside previous areas of heavy black concentration was marked. Nearly half of the black veteran households whose new 1972 locations were in Prince George's County had located in census tracts which <u>did not</u> directly adjoin previous areas of heavy black concentration. In fact, their homes were located in all parts of the county, including many which had long been almost exclusively white.

Table 12.

Racial Composition of Census Tracts For Black Veteran Homebuyers:
Percent Black Of Old And New Tracts
Washington Metropolitan Area, 1972

Percent Black Old Tract	Percent Black New Tract 0-9.9%	10-24.9%	25-49.9%	50-74.9%	75%+	Total
0-9.9%	(56.4)%	17.9%	17.9%	2.1%	5.7%	100.0%
10-24.9%	54.2%	(23.7)%	6.8%	3.4%	11.9%	100.0%
25-49.9%	34.1%	14.1%	(31.8)%	4.7%	15.3%	100.0%
50-74.9%	19.3%	14.0%	15.8%	(24.6)%	26.3%	100.0%
75%+	15.8%	14.6%	12.0%	8.6%	(49.0)%	100.0%

Source: Data drawn from the Veterans Administration's file of 1972 Homebuyers for the Washington Metropolitan Area. Census tract delineations were added according to street address. Data on racial composition were supplied from the publication, U. S. Bureau of the Census, U. S. Census of Population and Housing: 1970, Census Tracts, Final Report PC(2)-226. Table 1-P.

Generalization from a single case is somewhat hazardous; yet we know of no reason to believe that the general patterns found in Washington would not also apply to the post-1970 suburban movement of black families in other metropolitan areas where that movement was already substantial prior to the 1970 census. That is, we would expect that such suburban movement would have continued since 1970, at approximately the same or a more rapid rate. We would also expect that while most of the current black suburban homeseekers would continue to move in the general directions of heaviest black concentration in 1970, there would be increasing dispersal of residence. Based on a conservative generalization from the Washington experience, perhaps one-fourth or more would move to suburban neighborhoods where blacks had not lived previously, and a small but substantial minority (one-tenth or more) would move in directions far removed from those of previous black suburban migration.

The Recommended Procedure -- How can the analyst make reasonable estimates of trends in location of minority homeseekers for his own area? The method recommended here relies on 1970 census data for individual metropolitan areas to establish the general pattern and magnitude of the trends as they were evidenced at that time. The analyst then makes his own estimates as to further trends since that date -- using the Washington experience as his guide if he so wishes, or any data which may be at his disposal on the local situation. A very limited amount of data on movership patterns of black and Spanish-speaking Americans are available from the published 1970 census results for all major metropolitan areas, and for major jurisdictions in these areas with populations of 25,000 or more in either group. 11/

These published data, while far more limited in scope than we might wish, may often be more useful for estimating geographic trends than the unpublished census public use records used elsewhere in this method. The reason stems from the unavailability of the tapes for areas with less than 250,000 total population, which blurs the data for smaller areas, and their restriction to the county level. They are not even available separately for major cities which are part of still larger counties. This makes them virtually useless for analyzing trends in suburban minority residence for such large areas as Chicago and Los Angeles.

There are also some limitations with the published census movership data. For example, the data are not available separately for minorities in any metropolitan area, or part thereof, where there were less than 25,000 black or Spanish-speaking persons in 1970. Further, within metropolitan areas of any size, breakdowns of any population group are not available for individual jurisdictions with less than 50,000 total population.

Most commonly, published data for minorities will be found only for a metropolitan area as a whole and for its central city. Occasionally, data on minorities will also appear for one or two large suburbs in very large metropolitan areas. Since these suburbs will always be jurisdictions which had at least 25,000 black or Spanish-American residents as of 1970, seldom if ever will they be areas which minorities have recently entered for the first time. However, the analyst can construct combined data on recency of movership for suburbs with smaller minority populations using a subtraction process.

The procedure, illustrated in Tables 13 and 14 with data for blacks in metropolitan Los Angeles, is as follows:

(1) First, extract the totals from Table 13 in the census report on black owners and black renters by year of most recent move, entering the extracted figures in the formats shown in the table. Do this first for the entire Los Angeles SMSA (city and suburbs combined), using Table A-18 and the figures in the left-hand column. Enter them in the top row of the table. Next do the same thing for Compton, drawing from Table F-13, and inserting them in row 2. Finally, draw the data for Los Angeles City from Table 0-13 and insert them in row 3. These are the only two sub-jurisdictions of the Los Angeles SMSA for which mover data on black households are separately provided.

(2) Next, subtract the figures for Los Angeles City and Compton from the SMSA totals, by year of move, to obtain the statistics for "rest of area" shown in row 4.

Table 13.

Illustrative Application of Published Census Data to Determine Patterns of Geographic Change
Los Angeles Metropolitan Area - Black Owners

	Period of Most Recent Move			
	1969-1970	1968	1960-1967	1959 or Earlier
1. SMSA-TOTAL (Table A-13)	11,337	7,211	41,883	30,240
2. COMPTON (Table F-13)	1,250	763	3,635	2,705
3. LOS ANGELES (Table 0-13)	5,595	3,512	24,342	20,803
4. REST OF AREA (Row 1 - Row 2 - Row 3)	4,492	2,936	13,906	6,732
5. REST OF AREA (Annual Average)	3,593	2,936	1,738	N.A.
6. PERCENT (Row 4 ÷ Row 1)	39.6%	40.7%	33.2%	22.3%

Source: U. S. Bureau of the Census. 1970 Census of Housing. Metropolitan Housing Characteristics, HC(2)-120, Tables A-13, F-13, 0-13.

Table 14.

Illustrative Application of Published Census Data to Determine Patterns of Geographic Change
Los Angeles Metropolitan Area - Black Renters

	Period of Most Recent Move			
	1969-1970	1968	1960-1967	1959 or Earlier
1. SMSA TOTAL (Table A-13)	61,976	23,989	54,006	10,139
2. COMPTON (Table F-13)	2,488	841	1,807	177
3. LOS ANGELES (Table 0-13)	46,727	18,068	43,024	8,594
4. REST OF AREA (Row 1 - Row 2 - Row 3)	12,761	5,080	9,175	1,368
5. REST OF AREA (Annual Average)	10,208	5,080	1,146	N.A.
6. PERCENT (Row 4 - Row 1)	20.6%	21.2%	16.9%	13.5%

Source: U. S. Bureau of the Census. 1970 Census of Housing. Metropolitan Housing Characteristics, HC(2)-120, Tables A-13, F-13, 0-13.

(3) Compute an annual rate by dividing Column 1 (1969-70) by 1.25 and column 3 (1960-1967) by 8. These rates are inserted in row 5.

(4) Also compute the percentage which the "rest of area" figures make up of the "total SMSA figures in each column. Insert these figures in row 6.

In looking at the table, the analyst will note a clear trend over time. Black owners most recently moving to parts of the Los Angeles area other than Los Angeles City or Compton increased from an annual average of 1,738 households in the 1960-67 period to 2,936 in 1968 and to 3,593 in 1969-70. The percentages of the total also indicate a trend. In 1968 through 1970 approximately two black homeowner-movers out of every five in the Los Angeles area moved into homes outside the cities of either Los Angeles or Compton, compared to only 22 percent of those who had last moved prior to 1960. A similar, and in some ways even more dramatic, trend is evident for black renters. The suburban percentages moving to the rest of the area increased from 14 percent for those who last moved prior to 1960 to 21 percent in the 1969-1970 period. This represented over 10,000 suburban black renters annually.

The analyst may also wish to determine the degree to which recent suburban movership is related to income. This may be done quite easily and quickly by extracting the figures for the 1969-1970 period for the income brackets over $10,000, as indicated in Table 15. A combined figure for the brackets under $10,000 is obtained by subtraction. As the table shows, at income levels over $10,000 about 45 percent of black owners who moved acquired homes in the suburbs. For income levels below $10,000 the proportion was only 35 percent. There was, however, no indication of a further rise with income in the categories over $10,000.

Since no comparable data for the period since 1970 are available in most areas, the analyst must use his own discretion in deriving an estimate of suburban movership for the period for which he is analyzing the market. He may, if he wishes, apply the 1969-70 rate. This is probably conservative, but is unlikely to overestimate the suburban market. Or he may make a rough straight-line projection of the trends during the 1960s. For metropolitan Los Angeles, such a projection would indicate a suburban proportion of at least 50 percent by the mid-1970s among black households seeking homeownership, and at least 25 percent among black prospective renters. At the higher income levels, these proportions will likely be still larger -- probably rising to 60 percent or more of blacks seeking home ownership in the higher income brackets, if experience in the 1969-1970 period is a reliable indicator. Such estimates are a bit "chancy", but probably within reason.

The analyst may also wish to estimate how much of the total black suburban movement is occurring outside previously established "channels", or extensions of the ghetto pattern. For this purpose, he may choose to apply rough estimating ratios based on the post-1970 Washington experience (at least 25 percent outside suburban neighborhoods of previous black concentration, and at least 10 percent in directions other than the principal directions of black suburban movement evident at the 1970 census). If he does so, he should recognize the hazards involved in generalizing from a single case.

Local informants familiar with the black community may, however, be able to provide sufficient information about the "ghettos" and their extensions either to confirm or to contradict the existence of similar patterns in the area under study. Better still, if the analyst can obtain access to FHA or VA transaction files, he may be able to make a quick spot-check of the locations chosen by a sample of recent black purchasers under these programs and to determine these proportions himself.

Stage 5: Estimating the Impact of Supply Constraints on Potential Demand

At the conclusion of stage 4, the analyst should have produced a profile of potential housing demand among black homeseekers. While it involves estimates and assumptions, this profile nonetheless probably constitutes the best possible prediction of the structure of the minority homeseeker population as of the period for which the estimates are made -- assuming that the supply side of the market has remained unchanged. At the present time, this assumption is known to be invalid. The supply situation has been changing rapidly over the past several years, partic-

Table 15.

Illustrative Application of Published Census Data to Determine Relationship of Movership to Income Level Among Recent Movers Los Angeles Metropolitan Area - Black Owners

Owners Moving in 1969-1970	Income Level $10,000-$14,999	$15,000-$24,999	$25,000 or More	Other Income Levels	Total Owner-Movers
1. SMSA (Total A-13)	3,200	1,584	286	6,267	11,337
2. COMPTON (Table F-13)	347	115	16	772	1,250
3. LOS ANGELES (Table 0-13)	1,436	743	142	3,274	5,595
4. REST OF AREA (Row 1 - Row 2 - Row 3)	1,417	726	128	2,221	4,492
5. PERCENT (Row 4 ÷ Row 1)	44%	46%	45%	35%	40%

Source: U. S. Bureau of the Census. 1970 Census of Housing. Metropolitan Housing Characteristics, HC(2)-120, Tables A-13, F-13, 0-13.

ularly in regard to price and rent levels and availability of mortgage funds. The analyst must attempt to take these supply constraints into account in adjusting potential demand to effective demand.

The method recommended here relies on locally-available sources of current data on the price structure of the housing supply, as well as on considerable exercise of judgment by the analyst. The statistics on current price distribution are compared against the estimated distribution of potential demand by sales and rent levels obtained previously. The analyst then attempts to arrive at a judgment as to how the market potential will be affected by the price shifts.

The first step is to obtain the most current data on housing price levels available locally. Distributions are required and the medians which may sometimes be available from national survey data will not suffice. In the Washington, D. C. metropolitan housing market area, the Rufus Lusk Company compiles current listings of residential sales transactions, including actual selling prices, for all major jurisdictions. Some of the other five areas for which the techniques developed in this project have been tested have such services available also. In each of the five areas we found the following resources:

Atlanta, Georgia Metropolitan Area: Rufus Lusk Company: listing of residential sales transactions.

Boston, Massachusetts Metropolitan Area. Banker and Tradesman: listing of residential sale transactions.

Chicago, Illinois Metropolitan Area. The Realty Sales Guide, published by Chicagoland's Real Estate Advertiser.

Los Angeles-Long Beach, California Metropolitan Area. The Society of Real Estate Appraisers: data on housing characteristics and selling prices.

San Antonio, Texas Metropolitan Area. Unsold Inventory Survey, U. S. Department of Housing and Urban Development, Area Office, San Antonio, Texas.

If a listing service for current transactions does not exist, then the analyst should attempt to obtain data directly from the local governments of the area. This may, in some instances, involve actually extracting and compiling a sample of individual property transactions from local governments' records, and sometimes estimating transfer prices from the tax stamps if they are not available directly from the records.

Listing services are not generally available for rental properties, and here it is almost always necessary for the analyst to turn to the newspapers as a source of current price data. The major problem with this source of data on rent levels is that many of the older private rental properties offering better values may not need to advertise, since they can readily fill any vacancies by word-of-mouth. From the standpoint of a market analysis directed specifically to the minority market, however, this may be of less practical importance than it seems -- since minority homeseekers may not be in line for such word-of-mouth advertising in many cases.

An example of data on current price structure, developed by the Center from locally-available sources, is shown in the accompanying table based on data from the Atlanta metropolitan area. This can be considered a prototype for the kind of data the analyst can develop for his own area.

In the Atlanta area, the price data show a distribution of sales housing transactions that still includes many relatively modestly-priced properties. A large proportion of recent sales have been clustered at price levels well within the capability of much of the black middle-to upper-income homebuyer market. Whether blacks seeking to buy homes in metropolitan Atlanta will be given access to a sufficient portion of this supply is a different matter; clearly, however, the supply exists. The same may not be true in many other areas, and in some of them the analyst may find that recent price increases have removed a considerable proportion of potential minority homebuyers from the market.

As indicated earlier, however, minority households' potential for acquiring homes in the private market has been considerably blunted in the recent past by exclusion of working wives' incomes from the total eligible income base. Thus, to the extent that the recently-enacted prohibitions against discounting of wives' incomes are observed, and

Table 16.

Prices of Houses Sold
Atlanta, Metropolitan Area
June - July 1974

Housing Values	Number	Percent
Under $20,000	419	43.2%
$20,000 - $24,999	85	8.8%
$25,000 - $29,999	84	8.7%
$30,000 - $39,999	143	14.8%
$40,000 - $49,999	91	9.4%
$50,000 - $59,999	52	5.4%
$60,000 or more	95	9.8%
Total	969	100.0%

Source: Rufus S. Lusk & Son, Inc., 1 week samples between June and July 1974.

to the extent that similar prohibitions are applied to landlords, they will tend to counteract the downward pressure upon minorities' capability to participate in the private market caused by the escalation of prices at a more rapid rate than incomes. The "affordable mortgage" and "affordable rent" approaches recommended earlier take these changes into account.

Assessing Preferences for Features and Amenities

As a final stage in the methodology, the analyst may wish to consider whether there are special features or amenities in housing or neighborhoods which may be of particular interest to the minority market in his area. For this purpose, there will be very little in the way of published data or research reports to assist him. At the request of HUD, the Washington Center agreed to explore the existing literature on the preferences of minorities for features and amenities and to present the findings in this report.

On the basis of the available evidence, the analyst can reasonably assume that minorities will not differ substantially from the majority in their preferences for features and amenities in housing and neighborhoods. Thus he can assume that minorities will tend to occupy all types of housing and neighborhoods popular with the majority -- to the extent made possible by their economic capabilities and the equal availability of these homes and neighborhoods without discrimination, and subject also to the changing locational patterns over time dealt with in the preceding section.

An extensive search of the literature was made to locate and review studies bearing in any way upon minorities' preferences as to types and features of housing and neighborhood amenities. (These studies -- some 26 in number -- are included in Appendix B, Bibliography of Materials Used in Development of the Methodology.) The literature search provides no support for any belief that minorities as groups differ significantly from the majority in regard to their housing preferences, when factors such as differing income levels and discrimination in access to the housing supply are taken into account. There are, of course, large individual differences in preferences among members of both the majority and minorities. But no systematic differences are apparent for these groups overall.

The published literature which deals primarily with minorities' preferences in housing and neighborhoods is, however, scanty -- in line with the general tendency discussed at the outset of this report to ignore minorities as an element of significance in the housing market. As one example, the classic study of motivating factors in housing shifts, Rossi's Why Families Move, 12/ deliberately avoided interviewing minority families. And Daniel Starch and Staff's massive 1973 Profile of the Black Consumer 13/ contains a considerable amount of data on preferences and plans to acquire such items as automobiles and appliances, as well as plans to make various kinds of improvements in current housing accommodations. Yet the Starch report has no information on blacks' plans or preferences for changes in their housing accommodations.

There are only a few studies which focus primarily on minority housing attitudes or preferences. Minority market preferences are, however, dealt with in a secondary or partial manner in a number of studies. In these studies, unfortunately, there is usually no comparative analysis with the preferences of the majority. Moreover, all studies we were able to locate dealt with blacks only, and not Spanish-speaking households.

Despite these limitations, the studies which treat this topic -- through surveys directed at assessing preferences, through studies of experiences in the housing market, or through analyses of housing actually acquired -- are unanimous in indicating that minorities (or, more correctly, blacks) appear to judge desirability of housing and neighborhoods by the same general criteria as the majority population. Some studies, in fact, indicate a distinct preference on the part of minorities for housing in neighborhoods predominantly occupied by majority households. The reason, it appears, has little if anything to do with a desire for integration per se -- but rather with the belief that housing quality and neighborhood amenities are superior in such neighborhoods.

The 1973 collation by the National Academy of Sciences of the literature on Segre-

gation in Residential Areas 14/ contains a paper on "Institutional and Contextual Factors Affecting the Housing Choices of Minority Residents," by Donald L. Foley. This paper focuses on institutional barriers to freedom of choice by minorities in housing and on means for eliminating these barriers. Foley begins with the statement: "It has long been common knowledge that blacks and other disadvantaged minorities are denied free choice in housing." In a fairly brief discussion of "Minority Attitudes toward Housing," Foley concentrates not on preferences as such but on the obstacles to free exercise of those preferences. He concludes the section with a quotation from Kenneth Clark's Dark Ghetto: "The Negro who dares to move outside of the ghetto, either physically or psychologically, runs the risk of retaliatory hostility, at worst, or of misunderstanding, at best." Foley's discussion fairly well exemplifies the thrust of much of the literature which views residential segregation as unfortunate: minorities' housing preferences are of little relevance, not because they do not matter, but because they cannot be satisfied within the current discriminatory market.

Probably the most useful single study dealing with minority housing choices is one by Straszheim, 15/ based on analysis of data from a very large-scale (28,000 - household) sample survey in the San Francisco Bay area. The survey as a whole was directed at transportation planning questions, but obtained a considerable amount of housing data which Straszheim used to examine differentials in housing occupied by blacks and whites. After a carefully-done statistical analysis, Straszheim concluded that: "Most of the differential in housing consumption attributable to race can be traced to income and market imperfections. The latter, in the form of entry constraints that limit the supply of housing available to Blacks, is by far the most important".

Straszheim's data on racial differences in several housing variables indicated that "differences in tastes for housing between Blacks and Whites are clearly of less significance than price differentials," which his analysis indicated were due largely to discrimination. The one variable examined which appeared possibly to reflect some racial variation in preference was lot size -- and even here the differentials held relatively low levels of statistical significance. The author considered his findings to provide "a strong argument for open housing".

Similar conclusions, though with less throrough statistical backing, are indicated by several earlier studies. Foote, 16/ Schnore, 17/ and the Taeubers 18/ all produced evidence indicating that, within socio-economic groups, whites and blacks appear to display similar patterns of choice in terms of home ownership and residential differentiation.

Leaman, 19/ in an unpublished 1967 master's thesis dealing with housing decisions by blacks in Greensboro, North Carolina, found that in this highly-segregated situation, Negro families tended to cite as features of their "ideal and future" housing such items as "big lot," "clean, quiet neighborhood," "large amount of interior space," "neighborhood where people care for property and are of high socio-economic level," "den or family room," "wooded lot," and "ranch style home" -- all features suggesting preference for much the same kinds of housing predominantly occupied by middle-to upper-income whites in the same community.

Another study providing considerable direct insight on the topic of black housing preferences is a survey of black households published by the Leadership Council for Metropolitan Open Communities in Chicago. 20/ This study, which interviewed groups of black households living in both black and integrated neighborhoods, concluded that "Blacks consider housing in white areas to be better and more fairly priced than in black areas and they consider amenities to be superior in white areas."

In all, 71 percent of the black households surveyed who lived in black neighborhoods believed that they would be more likely to find the features most important to them in a white neighborhood. Among the features judged most important by these black households (in order of percentage of households naming them) were good police protection, fair rents or costs, quality of schools, comfort of housing, and friendly neighbors. Interestingly, only a small minority (21 percent) judged "nearness to church" as one of the most important factors in choosing a place to live.

The black respondents living in black

neighborhoods interviewed in the Leadership Council survey considered the following features and services to be better in white than black neighborhoods: housing, public transportation, public schools, fire protection, upkeep by landlords, upkeep by home owners, police protection, hospitals, stores and shopping centers, garbage collection, and street maintenance. In most of these categories, white neighborhoods were viewed as superior by 85 percent or more of the respondents.

Nonetheless, the black respondents currently living in heavily black areas who were surveyed in the Leadership Council study did indicate concern about moving into a white neighborhood. The most frequent cause for concern -- voiced by about half of the respondents -- was "feeling isolated." Presumably, if movement of blacks into formerly all-white neighborhoods increases, this cause for concern should diminish -- as also will fear of personal harm, which was voiced by about one-third of the households.

The Leadership Council survey also interviewed a group of black households who were living in integrated neighborhoods. These households strongly agreed with their coracialists living in heavily black areas in believing that amenities were generally superior in largely white communities. They tended to place less emphasis, however, on the importance of police protection (which ranked highest among the segregated group of respondents), and more on other attributes such as quality of schools, convenience to work, comfort of housing, and friendliness of neighbors. Perhaps the lesser emphasis on police protection reflected a higher level of safety in the integrated neighborhoods. Considerably fewer of the respondents living in integrated settings expressed concern over being isolated in a white community; yet this was still a concern of about one-third of this group.

Other studies, while usually less directly relevant, support the same general conclusions -- i.e., that blacks tend to place greatest emphasis on such aspects as quality of housing and neighborhood maintenance, good schools, safety, and other attributes valued by whites. Schermer and Levin 21/ concluded from a review of the evidence that "surveys conducted among middle- and moderate-income Negro households indicated a strong preference for detached houses, individual lots, and other features that are more characteristics of suburbia than of central city." Northwood and Barth, 22/ analyzing the characteristics and experiences of black pioneers in white neighborhoods of Seattle, concluded that quality of schools and spaciousness of housing were particularly important to these households -- as was security of their financial investment. Some families sought housing in particular neighborhoods, mainly because of location and general housing quality. Others sought good housing, schools and amenities wherever they could be acquired --without regard to specific neighborhoods. Comparing these black pioneers to whites, Northwood and Barth suggested that nearness to work did not seem to be as relevant to the blacks; but this was the only difference noted.

McKee, 23/ in a study of Toledo, Ohio in the mid-1950s, concluded that blacks were moving from rental into home ownership status as rapidly as their economic situation permitted. In a Boston survey, Rubin 24/ concluded that blacks expressing a desire to move to suburban neighborhoods were predominantly young and relatively prosperous; those who indicated a preference for traditional neighborhoods were less upwardly mobile. However, this latter finding should not be taken to mean that those less-mobile people are necessarily satisfied with their housing and neighborhood conditions. In a research note on the question, "Are the Black Poor Satisfied with Conditions in their Neighborhoods?", Levine et al. 25/ indicated that data they had developed in a study of five cities indicated relatively low levels of satisfaction by residents of poor black neighborhoods with housing, schools and police.

Grier and Grier, 26/ in a study of the market for a new racially-integrated subdivision in suburban Philadelphia in the mid-1950s, examined the differences between blacks who bought and occupied homes in the subdivision and those who cancelled out after a long wait. This development, one of the first intentionally integrated new subdivisions in the nation, employed a racial quota because of the developer's insistance on achieving a racially-integrated occupancy pattern in the face of a large backlog of unsatisfied demand for "typical" suburban sales housing by blacks. Many black purchasers were subjected to waits as long as two years. In consequence, a number of

black prospects finally gave up. The authors found certain systematic differences between those who cancelled and those who stuck out the wait. In general, these differences were such as to suggest to the authors that those who cancelled were already housed in situations more closely approaching the norm for the white middle class than those who persisted.

Examining the marketing experience of pioneering intentionally-integrated private housing developments nationally, the same authors 27/ found that both whites and blacks had been attracted successfully to such developments in a number of parts of the nation. They cited no evidence of racial differentials in housing preference, but did indicate a difference in market behavior: "The psychological effect of the 'closed market' on Negroes seems, from the experience of several developers, to have created a pronounced market inertia. Negroes frequently have difficulty in believing that new housing is really available to them ... white prospects enter the sample house, walk through it casually, and ask questions of the salesman in a tone indicating that they feel he is there to serve them. Negroes, on the other hand, frequently ask permission to come in."

As knowledge of the Federal Fair Housing Act spreads, and as more and more minority households move into formerly-closed neighborhoods, such reluctance -- and any apparent differences in housing preference it may create -- are likely to diminish.

Chapter 2 Notes

1/ U. S. Bureau of the Census. 1970 Census of Population. General Population Characteristics, PC(1)-B. (Washington: Government Printing Office). Table 24.

2/ Survival rates were derived from the U. S. Department of Health, Education and Welfare. Vital Statistics of the United States, 1970. Vol. 11, Section 5, "Life Tables." (Washington: Government Printing Office.)

3/ U. S. Bureau of the Census. 1970 Census of Population. Migration Between State Economic Areas, PC(2)-2E. (Washington: Government Printing Office.) Table 3.

4/ U. S. Bureau of the Census. 1960 and 1970 Censuses of Population. General Population Characteristics, PC(1)-B. (Washington: Government Printing Office). For 1960, Table 20. For 1970, Table 24.

5/ U. S. Bureau of the Census. 1960 and 1970 Censuses of Population. Detailed Characteristics, PC(1)-D. (Washington: Government Printing Office). For 1960, Table 106. For 1970, Table 153.

6/ U. S. Bureau of the Census. 1960 and 1970 Censuses of Housing. General Housing Characteristics, HC(1)-A1. (Washington: Government Printing Office). For 1960, Table 17. For 1970, Table 38.

7/ For 1960, U. S. Bureau of the Census. 1960 Census of Housing. Metropolitan Housing, HC-(2). Washington: Government Printing Office) Table A-13.

For 1970, U. S. Bureau of the Census. 1970 Census of Population. Detailed Characteristics, PC(1)-D. (Washington: Government Printing Office.) Table 206.

8/ Incomes reported in the decennial census year are always for the preceding year. Thus, the 1960 census reports incomes earned during 1959, and the 1970 census

9/ U. S. Bureau of the Census. Public Use Samples of Basic Records from the 1970 Census. County Group Public Use Sample File 1-100, Listing of Standard Metropolitan Statistical Areas. (Washington: Government Printing Office.)

10/ This effort was described in detail in the project's Phase II report.

11/ U. S. Bureau of the Census, 1970 U. S. Census of Housing, Metropolitan Housing Characteristics. HC(2) (Washington: Government Printing Office) Tables 11, 12, 13, and 16 for blacks. Tables 19, 20, 21, and 24 for persons of Spanish language or Spanish surname or of Puerto Rican birth or parentage. While the individual analyst may find other data on movers of some interest, the data on overall movership and movership by income level found in Tables 13 (for blacks) and 21 (for Spanish-speaking Americans) will be of chief interest.

12/ Rossi, Peter. Why Families Move. Glencoe, Illinois. The Free Press, 1955.

13/ Starch, Daniel and Staff. Profile of the Black Consumer. Mamaroneck, N. Y., 1973.

14/ Hawley, Amos H. and Vincent P. Rock. (eds.) Segregation in Residential Areas. (Papers on racial and socio-economic factors in choice of housing). Washington: National Academy of Sciences, 1973.

15/ Straszheim, Mahlon R. "Housing Market Discrimination and Black Housing Consumption." Quarterly Journal of Economics, 88: 19-43, February, 1974.

16/ Foote, Nelson, et. al. Housing Choices and Housing Constraints. New York: McGraw-Hill, 1960.

17/ Schnore, Leo F. "Social Class Segregation among Nonwhites in Metropolitan Centers." Demography, Vol. II (1965).

/ Taeuber, Karl E. and Alma F. Taeuber. Negroes in Cities. Chicago: Aldine, 1965.

19/ Leaman, Samuel Hardy. A Study of Housing Decisions by Negro Home Owners and Negro Renters. Unpublished Master's Thesis, University of North Carolina, Department of City and Regional Planning, Chapel Hill, 1967.

20/ Leadership Council for Metropolitan Open Communities, Factors Affecting Housing Choices for Black Families in Chicago.

21/ Schermer, George and Arthur J. Levin. Housing Guide to Equal Opportunity: Affirmative Practices for Integrated Housing. Washington: Potomac Institute, 1965.

22/ Northwood, L. K. and Ernest A. T. Barth. Urban Desegration Negro Pioneers and their White Neighbors. Seattle: University of Washington Press, 1965.

23/ McKee, James B. "Changing Patterns of Race and Housing: A Toledo Study." Social Forces, 41: 253-260, March 1963.

24/ Rubin, Morton. "The Negro Wish to Move: The Boston Case." Journal of Social Issues, 15: 4-13, October 1954.

25/ Levine, Daniel U., Nerman S. Fiddmont, Robert S. Stephenson and Charles B. Wilkerson. "Research Note: Are the Black Poor Satisfied with Conditions in Their Neighborhood?" Journal of the American Institute of Planners, 38: 3, May 1971.

26/ Grier, Eunice and George Grier. Buyers of Interracial Housing: A Study of the Market for Concord Park. Philadelphia: Institute for Urban Studies, University of Pennsylvania, 1956.

27/ Grier, Eunice and George Grier. Privately Developed Interracial Housing. Berkeley: University of California Press, 1960.

CHAPTER 3

Estimating The Spanish-Speaking Homeseeker Market

The Need for Separate Procedures

Although the basic assumptions underlying the model procedure are the same for all ethnic groups, including white homeseekers, it has been necessary to design separate procedures for Spanish-speaking households. In fact, two separate procedures are required -- one applicable to Spanish-speaking households in the Southwest, principally Mexican Americans, and one for other sections of the country, where another Spanish-speaking group may predominate.

As stated earlier, the problem stems in part from differences in the availability of reliable data with which to identify trends for the Spanish-speaking population. Census data on Americans of Spanish heritage were considerably improved between the 1960 and 1970 censuses. For 1960, published information on the Spanish-speaking population is limited largely to the five southwestern states, although there is some information in a few localities outside the Southwest where there was a significant Puerto Rican population in 1960. Furthermore, comparability of 1970 data with 1960 data is often limited because of changes in definition and other problems.

Perhaps even more serious than the limitations in the data from the decennial censuses is the fact that no statistics can be obtained with which to calculate survival or migration rates for Spanish Americans. Since Spanish Americans are generally identified as Caucasian, they are usually lumped with the white Anglo majority in birth and death records and in statistics on migration. There is, however, good reason to believe that they differ significantly from Anglos in these respects.

The procedures we recommend for estimating housing market demand among Spanish-speaking Americans are far from ideal. They are, however, the best we could devise in light of the severe limitations of the available data sources. The results cannot be considered comparable in general accuracy and reliability with those which can be obtained for the black household population. At best they should be viewed as rough indicators of the market's potential.

Estimating Spanish-Speaking Households: The General Procedure

Sources of Data -- While the same basic procedure for projecting the Spanish-speaking market is used for all areas, the method of application varies somewhat with the area for which the estimate is required, depending on the differential availability of data on that area from the 1960 census. Basically, the differences are these:

(1) For areas in the Southwest which had substantial Spanish-speaking populations in 1960, like San Antonio, fairly comprehensive data on these populations will usually be available. While the definition of Spanish-speaking was expanded somewhat between 1960 and 1970, for practical purposes these data can be treated as equivalent. The data for 1960 will be found in U. S. Census of Population: 1960. Subject Reports. Per-

sons of Spanish Surname. Final Report PC(2)-1B.

(2) For a few areas like New York and Chicago, with substantial Puerto Rican populations in 1960, fairly comprehensive data for this group are also available. For 1960, these data will be found in U. S. Census of Population: 1960., Puerto Ricans in the United States. Final Report PC(2)-1D. A limited amount of data for areas with smaller Puerto Rican populations will be found in U. S. Census of Housing: 1960. Housing Characteristics for State and Small Areas. Final Report HC(1). Separate reports are published for each state.

The analyst should determine, by looking at the data for the same area on "foreign stock", whether a substantial Spanish-speaking population of other than Puerto Rican origin existed in 1960. Depending upon its size, it may or may not be necessary to take this population into account also. These data will be found in U. S. Census of Population: 1960. Detailed Characteristics. Final Report PC(1)-D. Separate reports are published for each state.

(3) Another source provides some 1960 data on housing and household characteristics for Spanish-speaking in metropolitan areas with 25,000 or more households with heads of Spanish surname or of Puerto Rican birth or parentage. This is U. S. Census of Housing: 1960. Vol. II. Metropolitan Housing. Final Report HC(2). Among the areas for which data are available are El Paso, Texas; Los Angeles-Long Beach and San Francisco-Oakland, Calif.; and New York (Puerto Rican only).

(4) For all other areas, there are data available in 1960 only on persons of "foreign stock" by country of origin. These data are limited to total numbers, and are virtually useless except for a rough determination of the trend in total Spanish-speaking population. These data are found in U. S. Census of Population: 1960. Detailed Characteristics. Final Report PC(1)-D.

Only in the Southwestern states, therefore, are reasonably comprehensive census data on the entire Spanish-speaking population available for 1960. In a few areas outside the Southwest where that population was and has remained largely Puerto Rican in origin, data on Puerto Ricans may be available and usable instead. For other areas, the 1960 data are generally so skimpy as to be virtually useless. No data source is completely satisfactory. 1/

On the other hand, 1970 [illegible] Spanish-speaking Americans are much more detailed and comprehensive -- although subject to the probability of a significant undercount. Fairly detailed tables, equivalent in most important respects to those for black Americans, will be found in U. S. Census of Population: 1970. General Social and Economic Characteristics. Series PC(1)-C, and in U. S. Census of Housing: 1970. Metropolitan Housing. Series HC(2). Even more detailed data are available in unpublished form in the Census. One Percent Public Use Sample and Fourth-Count Summary tapes.

Updating the Household Base -- The projection method recommended for use in projecting black households was basically the accepted demographic procedure of component analysis, with the various components being estimated quite rigorously. Two factors required for such a component analytic procedure are survival rates and migration rates. Neither are available for the Spanish-speaking population. Thus, the projection technique recommended for use with this minority group is linear extrapolation of the 1960-1970 trend in number of households, using the best available data. The extrapolation is accomplished by the following formula:

$$f(x) = \frac{f(a)(b-x) - f(b)(a-x)}{(b-x) - (a-x)}, \text{ where}$$

f(x) is the quantity desired, in this case the household population for year x, which can be any year following 1970;
(a) is 1960;
(b) is 1970; and
(x) is the year for which quantity (f) is to be projected.

This procedure yields straight-line projections of 1960-1970 trends to produce an estimate of the total number of households. It is highly imprecise at best -- far less sat-

isfactory than the technique used to estimate black households -- but it is nonetheless the most logical statistical procedure available in light of the limitations of the data.

Using the data for Spanish-speaking households in the San Antonio metropolitan area and projecting the market to 1975, the procedure would be as follows:

Total Households 1975

$$= \frac{54,722\ (-5) - (90,302)\ (-15)}{(-5) - (-15)}$$

$$= \frac{(-273,610) + (1,354,530)}{10}$$

$$= 108,092$$

Basically the same technique of straight-line extrapolation is used to project the data on sub-components of the household distribution -- such as income groups and size categories -- where 1960 data on these sub-components exist. Table 17 shows a projected income distribution for San Antonio as an example. Here the technique is much the same as for blacks, except that it is applied to a 1975 total household estimate that is less precise.

For age of household head, no 1960 data are available even for southwestern areas. Hence, the procedure suggested in this case is simply to assume that the age distribution remained unchanged between 1970 and the year of the projection. This is dubious, but in the absence of any data from which a trend line can be derived, it nonetheless seems the most reasonable way to proceed. (See Table 18.)

Characteristics of the Mover Population

The procedure used to estimate the size and characteristics of the Spanish-speaking mover population from the total household population for this group is basically the same as that discussed earlier for blacks in Washington -- application of ratios derived from 1970 mover data to the current household estimates. The results will be less reliable -- not so much because of any inadequacies in the movers as because of inadequacies in the household base estimates to which these ratios are applied. (See Table 19 for San Antonio, as illustrative example.)

Areas Outside the Southwest: The Case of Chicago

Chicago, and a few other metropolitan areas with Spanish-speaking populations of diverse origins, present the analyst with a perplexing problem. Nowhere in the 1960 census publications are there statistics on household characteristics for the entire Spanish-speaking population in Chicago, although that population was sizable. However, the analyst can obtain figures on the Puerto Rican household population in 1960 and 1970. Statistics are also available in 1970 for the entire Spanish-speaking population. With this information a less exacting projection of the Spanish-speaking population can be achieved, using a ratio procedure.

Projecting Total Households -- Because of the inadequacy of the data on Spanish-speaking households in 1960, the analyst must turn to a ratio procedure using other sources of data relating to the Spanish population. For obtaining these data, we recommend:

(1) For the number of Puerto Rican households in 1960, use U. S. Census of Housing, Housing Characteristics in State and Small Areas, HC(2)-15, Table A-26.

(2) For the number of Puerto Rican households in 1970, use U. S. Census of Population, Puerto Ricans in the United States, PC(2)-1D, Table 206. The category "Head of Household" is equivalent to the number of households.

(3) For the number of Spanish-speaking households in 1970, use U. S. Census of Population, Detailed Characteristics, PC(1)-1D, Table 153.

The ratio procedure, using these three sources of data, is illustrated below. Basically, it assumes that the ratio between Puerto Rican and other Spanish-speaking households remains constant.

Step 1: Project to the year of study the total number of Puerto Rican households. For example, if the year of study in the Chicago Metropolitan Area is 1975, the straight-line extrapolation formula given previously would yield the following:

Table 17.

Projection of Spanish-Speaking Household Income
San Antonio Metropolitan Area, 1975

Income Distribution	Col. 1 Household Income Distribution 1960	Col. 2 Household Income Distribution 1970	Col. 3 1970 Income Distribution Collapsed to 1960 Total	Col. 4 - Rate of Change 1960 - 1970 Collapsed	Col. 5 1975 Income Distribution Without Population Growth	Col. 6 Percent Distribution of Income 1975	Col. 7 Additional Household Growth 1975	Col. 8 1975 Household Income Distribution
Less than $ 4,000	34,000	27,254	16,516	- .514	18,524	.2051	3,649	22,173
$ 4,000 - $ 6,999	15,867	25,620	15,526	- .021	25,469	.2820	5,017	30,486
$ 7,000 - $ 9,999	3,488	19,088	11,567	+2.316	23,126	.2560	4,554	27,680
$10,000 - $14,999		13,134	7,959		16,618	.1840	3,273	19,891
$15,000 - $24,999	1,367	4,297	2,604	+7.130	5,437	.0602	1,071	6,508
$25,000 and over		909	551		1,151	.0127	226	1,377
Total	54,722	90,302	54,723		90,325	1.0000	17,790	108,115

Note: For a more detailed explanation of how this table is prepared, see the method for projecting income for black households in Chapter 2.

Table 18.

Age Distribution of Spanish-Speaking Households,
San Antonio Metropolitan Area, 1975

Age of Head	Proportion (Derived from 1970 Census)	1975 Households
Under 20	.0117	1,265
20 - 24	.0796	8,604
25 - 29	.1177	12,722
30 - 34	.1135	12,268
35 - 44	.2219	23,986
45 - 54	.1870	20,213
55 - 64	.1401	15,144
65 and over	.1285	13,890
Total	1.0000	108,092

Note: To obtain the numbers in the third column, the analyst merely applies the 1970 age-group proportions in the second column to the estimated total number of households for 1975.

Table 19.

Illustrative Application of Estimating Ratios
to Provide Size Distribution of Mover Households
San Antonio Metropolitan Area - Spanish-Speaking Households
Spring 1974 - Spring 1975

	Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8
Size Distribution	1975 Distribution of Households	Renter Ratios	Number of Renters	Owner Ratios	Number of Owners	Adjustment Factor	Renters	Owners
1 Person	10,052	.2941	2,956	.0735	739	.444	1,312	328
2 Persons	21,078	.2919	6,153	.1429	3,012	.444	2,732	1,337
3 Persons								
4 Persons	36,589	.2746	10,047	.1288	4,713	.444	4,461	2,093
5 Persons	14,971	.1858	2,782	.1062	1,590	.444	1,235	706
6 Persons or More	25,402	.1772	4,501	.1392	3,536	.444	1,998	1,570
Total	108,092		26,439		13,590	.444	11,738	6,034

Total Puerto Rican households 1975

$$= \frac{(-5)(8,656) - (-15)(21,642)}{(-5) - (-15)}$$

$$= \frac{-43,280 + 324,630}{10}$$

= 28,135 households

Step 2: The ratio for obtaining the number of Spanish-speaking households in the Chicago area in the year 1975 is as follows:

$$\frac{\text{P. R. Households 1970}}{\text{S. S. Households 1970}} = \frac{\text{P. R. Households 1975}}{\text{S. S. Households 1975}}$$

With three of the four quantities now known, the ratio converts to:

$$\frac{21,642}{79,759} = \frac{28,135}{x}$$

$$x = \frac{2,244,019,645}{21,642}$$

x = 103,688 Spanish-speaking households in 1975.

After the total number of Spanish-speaking households has been obtained, the analyst can then proceed to estimate the characteristics of 1975 Spanish-speaking households, by age, size, and income, using the same ratio method for each category in the distribution.

Age of Head -- Using the 1970 household distribution by age of head derived from the census publication, Detailed Characteristics, PC(1)-1D, Table 153, a new projected distribution can be worked up by multiplying the proportion (represented as a four place decimal) which each category represents of the total in 1970, by the total projected Spanish-speaking household count. This assumes no change in the age distribution since 1970, which is the best available assumption given the data.

Household Size -- To estimate the projected household size distribution of Spanish-speaking households, assume that the household size distribution of Puerto Ricans in 1960 was similar to that of all Spanish-speaking households. With this assumption in mind, a percent distribution of household size in 1960 using the proportions in each category for Puerto Ricans is computed from the 1960 Housing Characteristics in State and Small Areas, HC(2) Series. Next obtain the 1970 household size distribution for Spanish-speaking households, derived from Detailed Characteristics, PC(1)-D Series. The 1960 and 1970 percent distributions are then extrapolated to the year of study, by each size category in the same manner as recommended for black households. Finally, each resulting percentage is multiplied by the total number of Spanish-speaking households for the year of study.

Household Income -- For 1960 the only income distribution available is for Puerto Rican families. The procedure to obtain a household income distribution is as follows:

Step 1: The number of Spanish-speaking households in 1960 is derived using the following fomula:

$$\frac{\text{P. R. Households 1960}}{\text{S. S. Households 1960}} \quad \frac{\text{P. R. Households 1970}}{\text{S. S. Households 1970}}$$

Since the number of Spanish-speaking households is not known in 1960, the equation uses this variable as the unknown quantity (x). Here again, for want of better data, we assume that the ratio of Puerto Rican to other Spanish-speaking households has not changed over time. Thus the equation becomes:

$$x = \frac{\text{(P. R. Households 1960) (S. S. Households 1970)}}{\text{P. R. Households 1970}}$$

$$x = \frac{(8,656)(79,759)}{21,642}$$

x = 31,900 Spanish-speaking households in 1960

Step 2: The percentage distribution of income for Puerto Rican families is assumed to be a good indicator of the income distribution of Spanish-speaking households and is applied to the total number of households to derive a Spanish-American household income distribution 1960. (U. S. Census of Population, Puerto Ricans in the United States, PC(2)-1D, Table 14)

Step 3: Using this derived household income distribution, the income projection method is applied as usual. (See Table 20 for an example of the method applied to Spanish-speaking households in Chicago in 1975.)

While this method involves several major

Table 20.

Projected Household Income Distribution for Spanish-Speaking Households, Chicago Metropolitan Area, 1975

Income Distribution	Puerto Rican Families 1960	Percent Distribution	Spanish-Speaking Distribution 1960	Spanish-Speaking Distribution 1970	1970 Collapsed Distribution	Rate of Change 1960-1970 Collapsed	Income Distribution Without Population Growth 1975	Distribution of Spanish-speaking Households 1975	Additional Household Growth 1970-1975	Spanish-speaking Household Income Distribution 1975
Less than $ 4,000	3,406	.4747	15,143	12,777	5,111	- .663	7,742	.0971	2,325	10,067
$ 4,000 - $ 6,999	2,681	.3737	11,921	16,441	6,576	- .448	13,775	.1727	4,134	17,909
$ 7,000 - $ 9,999	831	.1158	3,694	18,700	7,481	1.025	20,593	.2582	6,181	26,774
$10,000 - $14,999	257	.0358	1,142	19,702	7,881	10.153	23,291	.2921	6,992	30,283
$15,000 - $24,999				10,030	4,012		11,856	.1487	3,560	15,416
$25,000 and Over				109	844		2,492	.0312	747	3,239
Total	7,175		31,900	79,759	31,905		79,749		23,939	103,688

Note: As in the examples shown in Chapter [illegible] the minor differences be comparable totals in this and preceding tables are the result of putational errors and are to be expected. If these differences e[illegible]ed one percent, however, the work should be rechecked.

assumptions, we feel it probably yields reasonably accurate results. While family incomes are nearly always higher than household incomes -- which would lead to an overestimation of the number of Spanish-Americans in higher income brackets in 1960 -- Puerto Rican incomes were considerably lower than Mexican-American incomes in 1970. (The median family income for Puerto Rican, was $7,270 while it was $9,310 for Mexican-Americans.) Since there is no reason to believe that this relationship was different in 1960, the overestimation inherent in using Puerto Rican family income in 1960 is probably balanced out by the underestimation implied in taking Puerto Rican income as equal to the incomes of the rest of the Spanish-American population. Given this probable balancing of upward and downward biases, the Puerto Rican family income distribution used in 1960 probably reflects the income distribution of the Spanish-American population in that year with as reasonable accuracy as can be achieved in these circumstances.

Characteristics of the Mover Population

The same procedure followed previously is used in this case. Data can be developed, using the ratios in the identical procedures illustrated earlier for black potential homeseekers and for Spanish-speaking potential homeseekers in the Southwest, to obtain estimates for Spanish-speaking potential owners and renters by age of head, income and size.

Key Housing Choices

For Spanish-speaking households in any area, the matrix procedure described earlier for black homeseekers can be used to estimate probable choices in values, rents, and unit sizes based on recent mover data from the 1970 unpublished census results. The same cautions apply as stated earlier for blacks. As with blacks, the analyst can also estimate the levels of mortgages and rents which would be affordable assuming equitable applications of current criteria for credit eligibility and adherence to the legal restraint against discounting of wives' incomes. The second approach is to be preferred under current conditions.

Locational Choices

As with blacks, the analyst can use published data to estimate choice in location. The procedure is the same, and the data for Spanish-speaking Americans will be found in Table 21 of U. S. Census of Housing: 1970. Metropolitan Housing, Series (HC(2).

Supply Constraints

The same price data used to estimate the impact of current price constraints in the potential market among blacks are, of course, usable for Spanish-speaking homeseekers.

Chapter 3 Notes

1/ A list of the available data sources for 1960 on the Spanish-speaking population and their limitations was presented in the Phase II report of this project.

CHAPTER 4

Validating The Method

In too many cases, it has been impossible to test the reliability of an estimating methodology before recommending it for general use by comparing the results against an independent source of current data for the period for which the projections are made. In the present instance, such a check was fortunately available.

Independently of this project, the Washington Center for Metropolitan Studies conducted an area-wide census updating program coupling a rigorously-constructed sample survey of 6,500 households throughout the Washington area with data compiled by the major local governments of the area. This "mini-census", the only comprehensive mid-decade census update known to exist for any metropolitan area in the nation at this writing, obtained late 1974 data on almost every major census item, including all the ones estimated by this method.

Using this independent source, it was possible to obtain distributions of household sizes, ages of household heads, and household incomes for the representative cross-section of nearly 1,800 black households in the survey sample. These were expanded through weighting procedures to the universe of black households in the metropolitan area. The survey results could be compared with the projected household distributions generated by the model procedure. The household survey data were for fall (October 1), 1974. The estimates produced by the test application of the model procedure were for Spring (April 1), 1975. The difference of six months, or ten percent of the total elapsed time since the 1970 census, was not judged sufficient to invalidate the comparison -- particularly since household formation is somewhat seasonal and tends to be at a relatively low level during the fall and winter period which lies between the times of the two sets of estimates.

The Universe of Black Households

The comparative results for the universe of black households are demonstrated throughout this chapter. The total number of black households in metropolitan Washington as estimated by the model procedure for spring of 1975 is 261,412 (Table 21). The number of black households found in the fall 1974 "mini-census" is 254,100.

The overall difference is only about 7,300 households or 3 percent. Furthermore, this differential is in the direction that would be expected, in view of the fact that the model procedure produces estimates for a slightly later point in time. Clearly, the model procedure comes very close in its ability to project the total number of households, at least over the fairly brief time span for which it was developed. For characteristics of households, the method also produces results which, though varying somewhat from the survey data, are close enough for practical use.

Ages of Household Heads -- Table 22 shows the comparison between the distribution of ages of black household heads produced by the model market estimating procedure and the "mini-census" results. When allowance is made for the difference in the periods covered, which tends to cause the model market estimation procedure to produce slightly larger numbers, the two distributions will be seen to be closely similar.

Table 21.

Comparison of Total Number of Black Households As Projected By Model Market Estimating Procedure With Number Estimated By Census Updating Survey Washington Metropolitan Area

Projected By Model Estimating Method For April 1, 1975	Estimated By Census Updating Survey For October 1, 1974*	Difference	
		Number	Percent
261,412	254,100	7,300	2.9%

Source: Washington Center for Metropolitan Studies, Washington Area Census Updating System, Trends Alert. Data based on representative 6,500-household sample of Washington Metropolitan Area. Numbers rounded to nearest 100.

Table 22.

Comparison of Age Distribution for Black Household Heads As Projected by Model Market Estimating Procedure with Number Estimated by Census Updating Survey Washington Metropolitan Area

Age of Head	Projected By Model Estimating Method, For April 1, 1975		Estimated by Census Updating Survey For October 1, 1974*	
	Number	Percent	Number	Percent
Under 25	28,653	11.0%	23,500	9.2%
25 - 34	75,473	28.9%	70,200	27.6%
35 - 44	54,369	20.8%	52,400	20.6%
45 - 54	44,904	17.2%	41,900	16.5%
55 - 64	32,298	12.4%	38,300	15.1%
65 and Over	25,715	9.8%	27,800	10.9%
Total	261,412	100.1%**	254,100	99.9%**

*Source: Washington Center for Metropolitan Studies, Washington Area Census Updating System, Trends Alert. Data based on representative 6,500-household sample of Washington Metropolitan Area. Numbers rounded to nearest 100.

**Error due to rounding.

There is some tendency for the model market estimation procedure to underestimate the number and proportion of households headed by persons aged 55 and older, but the differences are not great. For younger households the two sets of data are more nearly alike, particularly when the time difference is taken into account.

Household Sizes -- Table 23 shows the comparison between the distributions of household size produced by the two sources. Here the correspondence is closer still. Again, the model procedure produces slightly higher numbers for most size categories, the direction of difference which would be expected in light of the time differential. The percentage distributions are virtually identical. The only substantial deviation between the two sets of results is for the size category of six persons and over. Here, the model procedure shows some tendency toward overestimation.

Incomes -- For incomes, the results from the two sources are more divergent. Table 24 shows the results side-by-side. Unfortunately, variations in the formulation of the two data sets made an exact comparison impossible in some categories, but the overall similarities and differences are clear nonetheless.

The model procedure tends systematically to overestimate the numbers of black households in the middle income brackets between $7,000 and $14,999, and to underestimate the numbers at both extremes of the income scale. The largest divergence by far comes at the $25,000-and-over level, where the model market estimation procedure estimates only about one-third as many black households as were found by the "mini-census". There is a similar but much smaller tendency toward underestimation in the $15,000-$24,999 category. At the lower income levels, the differences are generally smaller -- and, in light of the trend toward a rapid and general upgrading of money incomes during the first half of the 1970s, they may be due in part to the time differential.

As indicated in Chapter II, the income estimating procedure was intended to be conservative -- and to err, if at all, in the direction of underestimation. Clearly the errors are chiefly in the desired direction. Nonetheless, the estimate produced by the model procedure for the total number of black households in all income brackets $10,000 and above is not greatly different from the results of the "mini-census". The model procedure shows a total of 116,700 households in these income brackets. The "mini-census" shows about 128,400, about 7 percent more. The main divergence, therefore, is a selective tendency for the model procedure to underestimate the rapidity with which black households have moved into the higher income strata above $15,000 and, to an even greater extent, above $25,000.

This tendency means that the capability of black households in metropolitan Washington to acquire housing at the upper price levels is considerally greater than the figures produced by the model method and cited in this report would suggest. Their overall capability for participation in the private housing market is not greatly underestimated, however.

A Test of an Alternative Procedure -- In an effort to determine if an alternative procedure for allocating the household income distribution at the upper end of the scale would produce results closer to those of the "mini-census" than the one recommended in Chapter II, the Center applied the proportions reported for each income category in the Census Bureau's 1974 national Current Population Survey for the black household population of the U. S. as a whole. (The Current Population Survey does not employ a sample large enough to produce reliable income estimates for minority households at the level of most metropolitan areas, including Washington. Thus we cannot recommend it for use directly as a data resource on local minority markets.) The resulting figures for metropolitan Washington were not sufficiently different to justify any change in the method we have recommended. They varied by only about one percent in each income category from these produced by the recommended method, and were still considerably lower than the results of the area-wide "mini-census".

It is quite possible that the rate of gain in the upper strata of the income distribution has been significantly more rapid for blacks in metropolitan Washington than in U. S. metropolitan areas generally. This may be true because of geater opportunities for advancement afforded by the Federal Govern-

Table 23.

Comparison of Size Distributions for Black Households As Projected by Model Market Estimating Procedure with Numbers Estimated by Census Updating Survey Washington Metropolitan Area

Size of Household	Projected By Model Estimating Method For April 1, 1975 Number	Percent	Estimated By Census Updating Survey For October 1, 1974* Number	Percent
1 Person	58,689	22.5%	57,600	22.7%
2 Persons	61,172	23.4%	61,200	24.1%
3 Persons	47,578	18.2%	46,600	18.3%
4 Persons	37,906	14.5%	37,900	14.9%
5 Persons	24,051	9.2%	24,200	9.5%
6 or More Persons	32,024	12.3%	26,600	10.5%
Total	261,420	100.1%**	254,100	100.0%

*Source: Washington Center for Metropolitan Studies, Washington Area Census Updating System, Trends Alert. Data based on representative 6,500-household sample of Washington Metropolitan Area. Numbers rounded to nearest 100.

** Error due to rounding.

Table 24.

Comparison of Income Distribution for Black Households As Projected by Model Market Estimating Procedure with Numbers Estimated by Census Updating Survey Washington Metropolitan Area

Income Distribution	Projected By Model Estimating Method, For April 1, 1975 Number	Percent	Estimated By Census Updating Survey For October 1, 1974* Number	Percent
Under $ 4,000	37,137	14.2%	43,000	16.9%
$ 4,000 - $ 6,999	50,468	19.3%		
$ 4,000 - $ 7,999			52,800	20.8%
$ 7,000 - $ 9,999	57,083	21.8%		
$ 8,000 - $ 9,999			32,800	12.9%
$10,000 - $14,999	68,696	26.3%	59,600	23.5%
$15,000 - $24,999	41,075	15.7%	47,400	18.7%
$25,000 and Over	6,956	2.7%	18,400	7.2%
Total	261,415	100.0%	254,000	100.0%

*Source: Washington Center for Metropolitan Studies, Washington Area Census Updating System, Trends Alert. Data based on representative 6,500-household sample of Washington Metropolitan Area. Numbers rounded to nearest 100.

ment. The fact that the distributions produced by the model market estimation procedure as recommended herein correspond quite closely with those produced by allocations based upon national data suggests that the method we have developed may be more accurate for most other U. S. metropolitan areas than for Washington. In any event, no change in the procedure seems indicated.

Summing up, a comparative analysis of the differentials between the results of the model market estimation procedure and data from an independent source shows that the procedure can produce short-range projections of a sufficiently high degree of accuracy with regard to the universe of black households and major characteristics of that universe to qualify them for practical use in housing market analysis. Where the method errs significantly, it is in the direction of underestimating the economic capability of the market.

Black Mover Households

Using the results of the census updating survey, it was also possible to test the general accuracy of the model market estimating procedure in producing estimates of the number and characteristics of black households who would be in the market for housing in a given one-year time period during the mid-1970s. The survey asked the date of last move for all household heads in the sample. Thus, it was possible to obtain data on number and characteristics of the black population which had recently been in the housing market. These data were for households who moved in the time period from January 1974 to October 1974. The estimates of mover households produced by test application of the model market estimating procedure were for the period from Spring 1974 to Spring 1975. Once more, the difference between the two time periods was not judged sufficient to invalidate the comparison; movership tends to be relatively low in the late fall and winter.

While the census update survey obtained responses from a total of almost 1,800 black households, a sufficient number for high statistical reliability, the number of these households which had moved in the past year was considerably smaller -- 250. The 1970 Census Public Use Sample data used to develop the ratios employed in estimating the mover population were based on a one percent sample of all households; hence, they too represent a relatively small number of movers. Particularly when obtaining results for sub-categories of the black mover population (such as individual household size or age classes) these sample sizes could result in significant sampling variance. This fact should be taken into account in the comparisons which follow.

Total Number of Movers -- The total number of black mover households as estimated through the model market estimation procedure was approximately 46,000 (Table 25). The number shown by the census updating survey was slightly smaller, approximately 43,400. The difference of less than six percent between these numbers could be related to the time difference between the two sets of data. Sampling variability in the survey could also play a part, as of course could sampling errors in the ratios used for the model estimating procedure. Constraints in the supply (higher prices and a growing shortage of units) could well account for the difference also, since supply conditions had changed markedly between 1970 and 1975.

Owner-Renter Status -- The total number of black households likely to move into dwellings for sale in a one-year period was estimated by the model market estimating procedure as 5,937 (Table 26). The number who had done so in the period covered was found by the census updating survey to be 5,700. The difference between the two numbers was four percent.

The total number of black households likely to move into rental dwellings was estimated by the model market analysis procedure as approximately 40,000. The number found by the census updating survey was 37,700. The difference between the two numbers was six percent. The percentage breakdown of owners vs. renters were virtually identical for the two sources; the total numbers were larger for each category in the results of the model estimation procedure.

In short, the model market estimating procedure achieved a reliability considerably better than 90 percent in short-range projections of both total number of mover households and movership into owned vs. rented accommodations for black households in metropolitan Washington as compared with results from an actual household survey.

Table 25.

Comparison of Black Mover Households As Projected by Model Estimating Procedure with Numbers Estimated by Census Updating Survey
Washington Metropolitan Area

	Projected by Model Estimating Method for Spring 1974-Spring 1975	Estimated by Census Updating Survey for January-October 1974	Difference	
			Number	Percent
Black Recent Movers	45,735	43,400	2,300	5.1%

*Source: Washington Center for Metropolitan Studies, Washington Area Census Updating System, Trends Alert. Data based on representative 6,500-household sample of Washington Metropolitan Area. Numbers rounded to nearest 100.

Table 26.

Comparison of Tenure for Black Mover Households As Projected by Model Market Estimating Procedure with Numbers Estimated by Census Updating Survey
Washington Metropolitan Area

	Projected by Model Estimating Method for Spring 1974-Spring 1975		Estimated by Census Updating Survey for January-October 1974	
Tenure	Number	Percent	Number	Percent
Recent Mover Owners	5,937	13.0%	5,700	13.1%
Recent Mover Renters	39,798	87.0%	37,700	86.9%
Total Recent Movers	45,735	100.0%	43,400	100.0%

*Source: Washington Center for Metropolitan Studies, Washington Area Census Updating System, Trends Alert. Data based on representative 6,500-household sample of Washington Metropolitan Area. Numbers rounded to nearest 100.

The comparison of results from the model market estimating method and the census update survey showed somewhat lower degrees of correspondence with regard to detailed characteristics of mover households such as incomes and household size categories. These greater divergences may be partly a result of sampling variance, as noted earlier. They may also result in part from changing market constraints.

Comparisons for the black mover population by household sizes and incomes revealed generally similar patterns -- greater variations between the results for individual sub-categories than for the totals. (See Tables 27, 28.) In all instances, however, the distributions were sufficiently similar to indicate that the model market estimating procedure can be used as a practical tool for predicting the composition of the minority homeseeker market (in terms of characteristics such as household sizes, ages, and incomes) -- even when market conditions are changing rapidly. In terms of its ability to estimate the total size of that market, and the tendency of that market to seek sales vs. rental housing, the method appears to possess a high degree of precision.

Table 27

Comparison of Household Size for Black Mover Households As Projected by Model Market Estimating Procedures and Estimated by the Census Updating Survey
Washington Metropolitan Area

Household Size	Projected by Model Estimating Method for Spring 1974-Spring 1975		Estimated by Census Updating Survey for January-October 1974	
	Number	Percent	Number	Percent
1 - 3 Persons	31,680	69.3%	32,900	75.6%
4 - 5 Persons	9,852	21.5%	8,600	19.8%
6 or More Persons	4,200	9.2%	2,000	4.6%

*Source: Washington Center for Metropolitan Studies, Washington Area Census Updating System, Trends Alert. Data based on representative 6,500-household sample of Washington Metropolitan Area. Numbers rounded to nearest 100.

Table 28

Comparison of Income for Black Mover Households As Projected by Model Market Estimating Procedures and Estimated by Census Updating Survey Washington Metropolitan Area

Income Distribution	Projected by Model Estimating Method for Spring 1974-Spring 1975		Estimated by Census Updating Survey for January-October 1974	
	Number	Percent	Number	Percent
Less than $ 4,000	6,666	15.0%	8,100	18.6%
$ 4,000 - $ 9,999	20,584	46.4%	18,400	42.3%
$10,000 - $14,999	11,119	25.0%	8,300	19.1%
$15,000 and Over	6,037	13.6%	8,700	20.0%

*Source: Washington Center for Metropolitan Studies, Washington Area Census Updating System, Trends Alert. Data based on representative 6,500-household sample of Washington Metropolitan Area. Numbers rounded to nearest 100.

Adjustment Factors Used to Estimate Single Years of Age for Black Population

Age Category 1970	Number (United States: Urban - Black)	Adjustment
Under 1	398,555	.2013
1	380,151	.1920
2	382,425	.1913
3	396,131	.2000
4	423,113	.2137
Under 5:	1,980,375	
5	436,183	.1971
6	443,889	.2006
7	447,021	.2020
8	440,243	.1989
9	445,918	.2015
5-9:	2,213,254	
10	474,382	.2133
11	442,508	.1989
12	443,907	.1996
13	432,213	.1943
14	431,382	.1939
10-14:	2,224,392	
15	412,430	.2181
16	385,696	.2040
17	371,360	.1964
18	364,105	.1926
19	357,017	.1888
15-19:	1,890,608	
20	348,833	.2299
21	320,039	.2109
22	307,831	.2029
23	287,945	.1898
24	252,562	.1665
20-24:	1,517,210	

Appendix A-1 (Cont.)

Age Category 1970	Number (United States: Urban - Black)	Adjustment
25	255,828	.2094
26	247,701	.2027
27	253,376	.2074
28	233,177	.1909
29	231,637	.1896
25-29:	1,221,719	
30	239,123	.2237
31	209,096	.1956
32	208,041	.1946
33	199,191	.1863
34	213,480	.1997
30-34:	1,068,931	
35	211,614	.2081
36	201,405	.1980
37	209,432	.2059
38	191,147	.1880
39	203,406	.2000
35-39:	1,017,004	
40	222,159	.2200
41	193,282	.1914
42	200,345	.1984
43	191,868	.1900
44	202,007	.2001
40-44:	1,009,661	
45	198,408	.2111
46	186,351	.1083
47	194,276	.2067
48	181,250	.1929
49	179,423	.1909
45-49:	939,708	
50	20[illegible]56	.2502
51	163,499	.2016
52	154,760	.1908
53	146,232	.1803
54	143,717	.1772
50-54:	811,164	
55	148.747	.2121
56	137,760	.1964
57	141,985	.2025
58	129,015	.1840
59	143,771	.2030
55-59:	701,278	

Age Category 1970	Number (United States: Urban Black)	Adjustment
60	136,991	.2362
61	112,473	.1939
62	116,188	.2003
63	102,650	.1770
64	111,786	.1927
60-64:	580,088	
65	110,213	.2263
66	95,932	.1970
67	96,859	.1989
68	79,242	.1631
69	104,759	.2151
65-69:	487,005	
70	86,149	.2691
71	62,842	.1963
72	60,330	.1885
73	56,006	.1750
74	54,773	.1711
70-74:	320,100	

Source: U. S. Bureau of the Census, Census of Population: 1970. General Population Characteristics. PC(1)-B1 United States Summary. Table 50.

APPENDIX A - 2

Adjustment Procedure for Estimating Income of Black Households In Areas with Significant Populations of other "Nonwhite" Races

The method for estimating incomes of black households involves projection techniques using the household income distributions from the 1960 and 1970 Censuses. In a few metropolitan areas, especially on the West Coast, an adjustment to the method is required to take account of two factors:

(1) The presence in these areas of significant populations of other "nonwhite" races than black or Negro (mainly Asian-American); and

(2) The lumping of income data in the 1960 Census for all nonwhite races combined, together with a change in the 1970 Census procedures which provides income data separately for blacks and generally lumps other "nonwhite" races together with whites.

In most metropolitan areas the Asian-American population was sufficiently small in both 1960 and 1970 that the data may be used interchangeably. In a few areas like Los Angeles, where about one "nonwhite" household out of five in 1970 was Asian-American, a significant degree of error would clearly be introduced if no adjustment were made for their presence.

No published data from the 1960 Census are adequate for the purpose; hence, the recommended adjustment procedure uses 1970 data. Before deciding whether such an adjustment is necessary, however, the analyst should first examine the 1970 Census volume on "Japanese, Chinese and Filipinos in the United States" (PC(1)-C6) to determine whether significant proportions of these groups were present in the area under examination at that time. In general, outside of a few metropolitan areas in the West, the analyst may well decide that there is no need for the additional effort.

The procedure for obtaining adjustment factors from these data is shown in Appendix Table A-2-1. Data on family incomes by income class for the three principal "nonwhite" groups other than blacks -- Japanese, Chinese, and Filipinos -- are aggregated with those for blacks to obtain an approximate distribution of family income for all "nonwhites" as of 1970. This distribution, further combined as indicated by the bracketed figures, is the closest approximation readily obtainable for 1970 to the published "nonwhite" family income distribution for the same area in 1960.

The analyst will note in the example shown for Los Angeles that black families made up progressively larger proportions of the lower income categories among all "nonwhites" in this area than the categories at the upper end of the income scale. It is this unequal income distribution that necessitates an adjustment; otherwise, the projected income distribution would be distorted systematically.

To apply this adjustment, the analyst simply multiplies the proportions in column 6 of the table by the total numbers of "nonwhite" households in the same income categories in 1960. He uses the new numbers thus derived as his base data for the income distribution of black households in 1960, and inserts them in the income projection format shown in Chapter 2. All succeeding steps in the procedure are identical.

This adjustment relies on the assumption that while the overall levels of income for both blacks and other "nonwhite" races rose significantly between 1960 and 1970, the general relationships between these two distributions did not change greatly. While this assumption may not be completely correct, it is probably good enough for practical estimating purposes -- and almost certainly produces better results than omitting the adjustment procedure completely.

Appendix Table A-2-1

Illustrative Computation of Adjustment Factor for Income of Negroes Vs. All "Nonwhites" Using 1970 Data for Los Angeles-Long Beach Metropolitan Area

	Col. 1		Col. 2	Col. 3	Col. 4	Col. 5		Col. 6	
Family Incomes	Black		Japanese	Chinese	Filipinos	All Nonwhites (Approx.) (Col. 1 + Col. 2 + Col. 3 + Col. 4)		Black Proportion of All Nonwhites (Col. 1 ÷ Col. 5)	
Less than $ 1,000	8,322		377	180	223	9,102		.9143	
$ 1,000 - $ 1,999	8,334	41,231	449	223	171	9,177	45,065	.9081	.9149
$ 2,000 - $ 2,999	11,935		500	234	259	12,928		.9232	
$ 3,000 - $ 3,999	12,640		559	349	310	13,858		.9121	
$ 4,000 - $ 4,999	12,251		631	355	328	13,565		.9031	
$ 5,000 - $ 5,999	12,824	38,561	790	518	449	14,581	43,541	.8795	.8856
$ 6,000 - $ 6,999	13,486		1,011	448	450	15,395		.8759	
$ 7,000 - $ 7,999	13,625		1,121	533	504	15,783		.8633	
$ 8,000 - $ 8,999	12,140	36,603	1,379	505	503	14,527	43,664	.8357	.8383
$ 9,000 - $ 9,999	10,838		1,455	567	494	13,354		.8116	
$10,000 - $11,999	18,568		3,114	1,134	852	23,668		.7845	
$12,000 - $14,999	19,182		4,869	1,352	1,191	26,604	84,897	.7214	.6928
$15,000 - $24,999	18,132	58,813	7,430	2,213	1,519	29,294		.6190	
$25,999 - $49,999	2,534								
$50,000 or More	387		1,687	530	193	5,331		.5479	
	175,208		25,372	9,141	7,446	217,167			

Source: Data for Blacks: U.S. Census of Population, 1970. General Social and Economic Characteristics. PC(1)-C6, California. Table 94.
Data for other Nonwhite Groups: U. S. Census of Population, 1970. Japanese, Chinese and Filipinos in the U. S. PC(2)-16. Tables 14, 29, 44.

APPENDIX A - 3

Housing Market Estimating Ratios for Black and Spanish-Speaking Households, By Tenure and Region: Distribution of Income, Household Size, and Age of Head

Housing Market Estimating Ratios, Black and Spanish-Speaking Households
By Tenure, and Region, Distribution of Income

	Distribution of Income						
Region	Less than $4,000	$4,000 - $6,999	$7,000 - $9,999	$10,000 - $14,999	$15,000 - $24,999	$25,000 and Over	Total
Northeast:							
Black							
Owner	.01	.05	.07	.12	.10	.04	.05
Renter	.41	.39	.29	.26	.13	.20	.31
Spanish-speaking							
Owner	Not Available (See note at end of table)						
Renter	Not Available						
Midwest:							
Black							
Owner	.06	.9	.14	.16	.18	.29	.09
Renter	.38	.7	.30	.23	.16	.13	.28
Spanish-speaking							
Owner	.01	.03	.08	.08	.14	.16	.07
Renter	.64	.64	.47	.36	.27	.21	.48
South:							
Black							
Owner	.04	.07	.13	.14	.14	.06	.07
Renter	.32	.20	.22	.16	.11	.03	.25
Spanish-speaking							
Owner	.08	.12	.14	.19	.18	.21	.13
Renter	.43	.35	.25	.23	.06	.02	.30
West:							
Black							
Owner	.04	.12	.19	.18	.14	.16	.11
Renter	.42	.49	.22	.16	.10	.00	.31
Spanish-speaking							
Owner	.07	.13	.15	.21	.17	.22	.13
Renter	.50	.43	.27	.19	.14	.12	.30

Appendix A-3

Housing Market Estimating Ratios, Black and Spanish-Speaking Households, By Tenure, and Region, Household Size

Region	Household Size 1 Person	2 Persons	3 Persons	4 Persons	5 Persons	6+ Persons	Total
Northeast:							
Black							
Owner	.02	.05	.04	.08	.07	.08	.05
Renter	.39	.34	.36	.37	.30	.28	.31
Spanish-speaking							
Owner	Not Available (See note at end of table)						
Renter	Not Available						
Midwest:							
Black							
Owner	.03	.08	.10	.15	.17	.16	.09
Renter	.38	.30	.35	.34	.26	.24	.28
Spanish-speaking							
Owner	.00	.04	.06	.06	.13	.08	.07
Renter	.54	.54	.64	.62	.38	.31	.48
South:							
Black							
Owner	.04	.05	.10	.10	.10	.10	.07
Renter	.31	.25	.31	.27	.24	.23	.25
Spanish-speaking							
Owner	.04	.10	.17		.13	.16	.13
Renter	.35	.41	.34		.25	.21	.30
West:							
Black							
Owner	.01	.09	.12	.18	.14	.21	.11
Renter	.42	.31	.42	.30	.26	.25	.31
Spanish-speaking							
Owner	.06	.11	.17		.20	.14	.13
Renter	.42	.31	.37		.26	.25	.31

Appendix A-3

Housing Market Estimating Ratios, Black and Spanish-Speaking Households By Tenure, and Region, Age of Household Heads.

Region	Age of Head: Under 25	25-29	30-34	35-44	45-54	55-64	65 and Over	Total
Northeast:								
Black								
Owner	.05	.05	.08	.05	.05	.03	.01	.05
Renter	.67	.52	.36	.29	.23	.19	.19	.31
Spanish-speaking								
Owner			Not Available (See note below)					
Renter			Not Available					
Midwest:								
Black								
Owner	.09	.12	.15	.14	.08	.03	.03	.09
Renter	.66	.50	.32	.23	.18	.33	.19	.28
Spanish-speaking								
Owner	.03	.05	.04	.11	.08	.05	.08	.07
Renter	.88	.69	.54	.34	.32	.17	.24	.48
South:								
Black								
Owner	.08	.14	.13	.10	.05		.03	.07
Renter	.60	.47	.32	.23	.14		.12	.25
Spanish-speaking								
Owner	.06	.22	.22	.15	.09	.06	.03	.13
Renter	.70	.51	.26	.22	.18	.18	.08	.30
West:								
Black								
Owner	.05	.15	.11	.21	.07	.05	.02	.11
Renter	.73	.51	.37	.28	.18	.17	.19	.31
Spanish-speaking								
Owner	.09	.23	.20	.14	.09	.09	.06	.13
Renter	.80	.47	.33	.22	.14	.14	.15	.30

Note: The criterion used for developing housing market estimating ratios was either 100,000 black or Spanish-speaking households within a metropolitan area. In the Northeast, New York is the only metropolitan area with a sufficient number of Spanish-speaking households. However based on the results of a regression analysis of 47 metropolitan areas, New York's Spanish-speaking households were found to be atypical. Hence to use data on New York as a surrogate for all Spanish-speaking in the Northeast could have misrepresented the region as a whole.

APPENDIX A - 4

Examples of Estimating Matrices

This Appendix provides examples of matrices for estimating housing values and rents likely to be sought by households of black and Spanish-speaking minorities. The matrices were developed from special tabulations of 1970 Census Public Use Sample data prepared by the Washington Center for Metropolitan Studies.

Such matrices can be prepared for any metropolitan area with a substantial black or Spanish-speaking population, using the Public Use Sample Tapes. For the reasons specified in the text, however, this method is not generally recommended for use under current conditions.

Table A-4-1

Matrix for Estimating Values of Housing Units Likely to be Sought by Black Potential Owners Based on 1970 Relationships of Values to Incomes for Recent Movers -- Atlanta, Ga. Metropolitan Area

	Incomes						
Housing Values	Less than $4,000	$4,000-$6,999	$7,000-$9,999	$10,000-$14,999	$15,000-$24,999	$25,000 and over	Total
Less than $15,000	.045	.122	.093	.126	.000	.015	.402
$15,000 - $19,999	.027	.081	.093	.126	.000	.000	.328
$20,000 - $24,999	.018	.013	.000	.158	.000	.000	.189
$25,000 - $34,999	.000	.000	.373	.000	.017	.000	.054
$35,000 - $49,999	.009	.000	.000	.000	.017	.000	.026
$50,000 and over	.000	.000	.000	.000	.000	.000	.000
Total	.101	.216	.223	.411	.034	.015	1.000

Table A-4-2

Matrix for Estimating Values of Housing Units Likely to be Sought by Black Potential Owners Based on 1970 Relationships of Values to Incomes for Recent Movers - Chicago, Ill. Metropolitan Area

	Incomes						
Housing Values	Less than $4,000	$4,000-$6,999	$7,000-$9,999	$10,000-$14,999	$15,000-$24,999	$25,000 and over	Total
Less than $15,000	.019	.000	.033	.049	.018	.000	.115
$15,000 - $19,999	.026	.041	.098	.176	.095	.000	.044
$20,000 - $24,999	.000	.005	.049	.106	.113	.009	.281
$25,000 - $34,999	.000	.026	.016	.035	.058	.009	.139
$35,000 - $49,999	.000	.000	.005	.007	.000	.000	.021
$50,000 and over	.000	.000	.000	.007	.000	.009	.007
Total	.041	.072	.201	.381	.279	.026	1.000

Table A-4-3

Matrix for Estimating Gross Rent Levels Likely to be Sought by Black Potential Renters Based on 1970 Relationships of Rent to Incomes for Recent Movers -- Los Angeles-Long Beach Metropolitan Area

	Incomes						
Gross Rents	Less than $4,000	$4,000-$6,999	$7,000-$9,999	$10,000-$14,999	$15,000 $24,999	$25,000 and over	Total
Less than $80	.109	.025	.017	.011	.000	.000	.162
$ 80 - $ 99	.099	.066	.035	.035	.005	.000	.240
$100 - $119	.082	.061	.047	.035	.012	.000	.236
$120 - $149	.047	.057	.047	.041	.009	.000	.201
$150 - $199	.016	.022	.036	.039	.014	.000	.127
$200 - $249	.005	.005	.006	.013	.002	.000	.029
$250 - $299	.001	.000	.002	.002	.000	.000	.004
$300 and over	.001	.000	.000	.000	.000	.000	.001
Total	.360	.236	.188	.175	.041	.000	1.000

Table A-4-4

Matrix for Estimating Gross Rent Levels Likely to be Sought by Spanish-speaking Potential Renters Based on 1970 Relationships of Rents to Incomes for Recent Movers - Los Angeles-Long Beach Metropolitan Area

	Incomes						
Gross Rents	Less than $4,000	$4,000-$6,999	$7,000-$9,999	$10,000-$14,999	$15,000 [illegible],999	$25,000 and over	Total
Less than $80	.074	.043	.029	.012	.001	.001	.160
$ 80 - $ 99	.062	.059	.045	.030	.008	.001	.205
$100 - $119	.039	.049	.050	.041	.011	.000	.190
$120 - $149	.036	.041	.067	.066	.017	.001	.229
$150 - $199	.019	.026	.040	.052	.027	.002	.166
$200 - $249	.004	.003	.007	.012	.006	.000	.032
$250 - $299	.002	.001	.000	.005	.005	.000	.013
$300 and over	.001	.001	.000	.000	.002	.002	.006
Total	.239	.222	.236	.217	.079	.007	1.000

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